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ABSTRACT

The chief interest of this study was the relationship between two predictor variables (counselor-student ratio and visiting the counselor) on the one hand and criteria of counseling effectiveness on the other. Other, possibly significant, control variables are described, most notably general academic aptitude. The data was collected primarily by questionnaires from those public high schools of Illinois with an enrollment of 100 or more students. The findings supportive of guidance included: (1) students' knowledge about the educational requirements of their chosen occupations was increased; (2) high counselor availability correlated positively with a larger proportion of high academic aptitude girls being enrolled in the college prep curricula; and (3) the counseling increased the frequency with which students were found to have chosen occupations appropriate to their abilities. The general conclusion is that, while guidance counseling as practiced in unselected Illinois schools affects students favorably, important qualifications are necessary for accurate and useful data interpretation. These are discussed. (TL)

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THE EFFECTIVENESS OF GUIDANCE IN TODAY'S HIGH SCHOOLS:

A Survey in Illinois

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INTRODUCTION

All over the nation, five days a week, guidance counselors in secondary schools are talking to students about their future, to teachers about their students, to administrators about their curricula, and to each other about the effectiveness of all this conferring. Into these and many other activities involved in the complex enterprise known as guidance go an immense number of man-hours of effort.

Figures about guidance on a national scale are hard to come by and rarely current. Something of the scope of guidance activity in recent years, however, can be gained from such figures as those of Huslander and Scholl (1957), who estimated that more than 43,000 counselors were employed in U. S. elementary and secondary schools in 1955-56. Their estimate was based on a nationwide questionnaire sample of 1,333 elementary and secondary school principals, supplemented by interviews with principals and state supervisors of guidance. Extrapolating from the expectations of these same principals when they were asked to give their "realistic" prognostications, Huslander and Scholl estimated that about 74,000 counselors would be employed by 1961. In addition, the principals indicated that they would like to see perhaps 108,000 counselors in U. S. schools by 1961. Similar figures were given by the U. S.

Huslander, Stewart C. and Scholl, Charles E. U. S. school principals report their counselor needs. Vocational Guidance Quarterly, 1957, 6, 3-4.

Department of Labor (1959). According to a 1956 survey reported by the Department's Bureau of Labor Statistics, there were about 44,000 counselors

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U. S. Department of Labor, Bureau of Labor Statistics. School counselors. Occupational Outlook Handbook (Bulletin No. 1255). Washington, D. C.: Gov't Printing Office, 1959.

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in public schools at the time. Of these, about 10,000 were full time, 8,000 were half time or more, and 26,000 were less than half time. In public high schools in Illinois alone, about 22,775* man-hours per week were devoted

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* Computed from Table V of Michelman (1960).

Michelman, C. A. Development of Guidance Services, 1958-1959. Springfield, Illinois: Office of Superintendent of Public Instruction, Board of Vocational Education, Occup. Info. and Guid. Service, 1960. (Mimeo).

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to guidance during 1958-59. In Illinois, as in many other states, man-hours continued to rise in subsequent years. Although a few statistics for subsequent years are available, the study to be reported here was conducted in Illinois in 1959, and we shall content ourselves with indicating the scope of the counseling effort in the neighborhood of that year.

To meet the growing demand for counseling man-power, many institutions have been offering training for the increasing numbers of school counselors. MacMinn (1959) reported that 243 colleges or universities were offering regular programs and courses in this field in 1959-60. In addition, 126 institutions were offering workshops and conferences on school personnel work during the summer of 1959, MacMinn (1959) reported,

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MacMinn, Paul. Part I: Preparation Programs and Course Offerings in School and College Personnel Work, 1959-60. Part II: 1959 Summer Course Offerings, Conferences and Workshops in School and College Personnel Work. U. S. Dept. HEW, Office of Education, Circular No. 591. Washington, D. C.: Gov't Printing Office, 1959.

not counting those institutes sponsored by NDEA. In addition, workshops and conferences of varying duration were offered during the academic year 1959-60 by 39 institutions. Turning to institutes supported by NDEA, the U. S. Department of Health, Education, and Welfare reported in 1960 that 84 summer institutes in guidance were being supported by funds authorized by NDEA; and for the summer two years later the Department (1961) announced that 66 institutes would be conducted, this time at a more advanced level.

These figures illustrate the magnitude of the effort which is being made to bring the benefits of guidance and counseling to the secondary-school students of the nation. This effort can be seen directly by anyone who spends a little time in any moderate-sized high school. Certainly teachers and students are well aware of it, as the study to be reported here will attest.

But what is the outcome of the work of this multitude of guidance counselors? Are they achieving the results they wish to achieve? Are they reaching the goals held for them by those who trained them, by the U. S. Office of Education, by the authors of the National Defense Education Act, by the parents of the students? Whatever standard one may choose (and surely there must be at least a few widely agreed goals for guidance counselors), the urgent question is, put briefly: Is the present guidance effort effective?

Purpose of the Study

We are not asking here whether certain counselors can be found who have provided valuable guidance for certain students who would not

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U. S. Dept. HEW, Office of Education bulletin of January 20, 1960.

U. S. Dept. HEW, Office of Education bulletin of December 22, 1961.

otherwise have received it. Surely such counselors and students can be found. Nor are we asking (at least at the outset) whether the nationwide guidance undertaking can potentially achieve certain goals. Rather, we are asking this: What evidence can be found that the enterprise of guidance counseling, as it stands today and considered over some large representative group of schools, is achieving certain goals widely held to be desirable and reasonable?

Let there be no confusion about the point. The study to be reported here did not address itself to what kinds of counseling (or counselors) might be more effective than others. It sought, rather, to seek evidence that guidance counseling as presently staffed and practiced in a wide sample of Illinois high schools was having certain effects. The chief effects looked for were effects on the curricular and occupational choices of students, their perceptions of the nature of their chosen occupations and of the requirements for entering them, their awareness of the availability of guidance services, and some other related matters. Obviously, not all possible goals which counselors might hold for themselves (or which others might hold for them) were included in the study. In fact, only a very few of the purposes of counseling were studied, and these were not studied in great depth. However, we chose purposes (or criteria of effectiveness) which we felt almost every high school counselor or principal would include in his list of desirable outcomes. The variables we chose to reflect purposes will be detailed in Chapter II.

Previous Assessments of Counseling Effectiveness

Although considerable research has been done in seeking more effective counseling techniques, more efficient ways of training counselors, and even better ways of organizing guidance services in the schools, very few projects have been undertaken to assess current outcomes of existing guidance services in reasonably representative samples of secondary schools. When existing guidance services have been assessed, the studies have typically confined themselves to one or a few schools and have typically been carried out without controls or comparisons which would permit reasonable confidence that the results described could be attributed to the existence of the guidance services. Even when state departments of education have studied schools over an entire state, the opportunity to study changes over time or to compare schools having guidance services with those not having them has typically been neglected. A discouraging number of studies have consisted of little more than making a list of presumably desirable features of a guidance program and then asking administrators, teachers, students, or others for their opinions on whether the school was doing well or poorly in respect to the listed features. People busily working with a particular goal in mind find it notoriously easy to convince themselves that their efforts are indeed bringing them closer to the goal, regardless of whether any objective evidence is available to support their optimism. Because of this fallacy, evaluations of guidance programs made through ratings by school people can have no reliable correspondence with the objective facts about the outcomes of the guidance program. This fact will be demonstrated once again in a later chapter.

Even in recent years, studies of outcomes of existing guidance services in reasonable samples of schools have been very few. In a review in 1957 of the previous three years' research on guidance and counseling, Cottle (1957) mentioned some studies of single secondary schools in which the guidance program was assessed but no studies at all of representative samples of schools. In the most recent issue of the Review of Educational

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Cottle, William C. The evaluation of guidance services. Review of Educational Research, 1957, 27, 229-235.

Research which treats this topic, Rothney and Farwell (1960) mentioned only

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Rothney, John W. M., and Farwell, Gail F. The evaluation of guidance and personnel services. Review of Educational Research, 1960, 30, 168-175.

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two studies meeting our requirements. Let us briefly review the two studies mentioned by Rothney and Farwell; the first is very limited in scope while the second is the most extensive yet undertaken on the problem of the effectiveness of secondary-school guidance.

Hill and Morrow (1957) undertook a study of drop-out rates in the

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Hill, George E., and Morrow, Robert O. Guidance and the drop-out rate in 19 southeastern Ohio schools. Vocational Guidance Quarterly, 1957, 5, 153-155.

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19 largest high schools of southeastern Ohio. The adequacy or extent of guidance services in each school was assessed by a panel of five guidance specialists, and the "drop-out index was computed by determining the percentage of the average enrollment in grades nine through twelve who withdrew from the school during the twenty-month period of the study" (p. 153). The following table, condensed from the article by Hill and Morrow, shows certain characteristics of the schools in each of three categories of adequacy of guidance services, including the mean drop-out rate for each group.

Although in the predicted direction, the differences in the drop-out rates were not statistically significant. Hill and Morrow did not present any more refined analysis; for example, they did not describe the relation of the drop-out rate with mean number of counselors while holding constant a variable which might be concomitant but of lesser immediate interest such as size of school or mean academic aptitude of the students. This study cast little light on the efficacy of guidance services.

Table HM-1. The Hill and Morrow Study: Mean Drop-Out Rates and Other Characteristics of Schools Differing in Adequacy of Guidance Services.

	Adequacy of Guidance Services		
	Below average	Average	Above average
Number of schools	9	5	5
Mean enrollment	347	401	970
Total number of counselors	2	7	15
Mean number of counselors	.2	1.4	3.0
Percent of 1955 graduates who entered college	17.3	21.9	32.0
Mean drop-out index	10.0	9.9	9.2

However, Hill and colleagues are carrying forward further studies which may produce more detailed results.*

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*See Hill (1959, 1960) and Hill and Nitzschke (1960).

Hill, George E. Evaluating the School's Testing Program. Athens: Center for Educ. Service, Ohio University, 1959 (Pupil Services Series, No. 2).

Hill, George E. The Staff Evaluate the School's Testing Program. Athens: Center for Educ. Service, Ohio University, 1960 (Pupil Services Series, 1960, No. 1).

Hill, George E. and Nitzschke, Dale F. Students and Parents Evaluate the School's Guidance Program. Athens: Center for Educ. Service, Ohio University, 1960 (Pupil Services Series, 1960, No. 2).

By far the most ambitious of the assessment studies so far undertaken is that of Rothney (1958). Beginning in 1948, Rothney and his co-

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Rothney, John W. M. Guidance Practices and Results. New York: Harper, 1958.

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workers began a longitudinal study of all the tenth-graders in the four high schools of four Wisconsin communities. The tenth-grade students were divided randomly into two groups: one group to be counseled and one group not. The counseling of the experimental group was done by trained graduate students. "The study," says Rothney (1958, p. xix), "was designed to set up a guidance program similar to those commonly provided in public secondary schools and to appraise its effectiveness." The ratio of counselors to students was perhaps one to 350, and an individual student in the experimental group may have talked with a counselor for as little as an hour during a year or for as much as 50 hours.* Rothney's (1958) book reported results obtained after five years of following up the subjects who graduated from high school. Remarkably, Rothney reached 100 percent of the subjects who were in the study at graduation from high school and were still alive. From the great variety of findings reported there, the following tables have been selected and condensed from the book's Chapter V.

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*These estimates were obtained by personal communication with Dr. Rothney.

Some interesting differences between the experimental and control groups are to be seen in these tables; notably, the nine percent difference in those attending college shown in Table R-4, the eleven percent difference in girls achieving academic honors shown in Table R-5, and the thirteen percent difference in boys moving upward rapidly in their occupations shown in Table R-6. As mentioned earlier, these tables are only a few of the many to be found in Rothney's (1958) Chapter V. Other tables showed less dramatic differences. In summing up his findings, Rothney (1958, p. 387) says,

> In general it will be seen that the differences between the control and experimental subjects are in the directions that are commonly hypothesized by guidance workers. With some exceptions, the differences are usually small and insignificant when considered separately. When, however, so many of them point so consistently in the same direction, they cannot be ignored. They do seem to suggest that membership in the experimental group might have made some difference in the post-high-school performances and attitudes of these young men and women.

However, there have been sequels to Rothney's five-year follow-up study. Merenda and Rothney (1958) reported an eight-year follow-up of the original subjects, and in 1962 Rothney addressed the national convention of the American Personnel and Guidance Association meeting in Chicago, where he reported data taken from the same subjects ten years after graduation from high school; all but a small handful of the

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Merenda, Peter F., and Rothney, John W. M. Evaluating the effects of counseling--eight years after. Journal of Counseling Psychology, 1958, 5, 163-168.

Table R-1: Rothney's Wisconsin Counseling Study: Percentages of Subjects Five Years After High School Who Completed or Were Enrolled in Post-High-School Training. (Rothney's Table 76.)

	Experimentals (N=343)	Controls (N=342)
Held bachelor's degree	13 %	10 %
Currently enrolled, undergrad. or grad.	10	7
Other: certificates, apprenticeships, and incompleted programs	20	22
No post-high-school training	57	61
Total	100 %	100 %

Table R-2: Rothney's Wisconsin Counseling Study: Percentages of Subjects Expressing Indicated Degrees of Satisfaction with Their Status Five Years After High School. (Rothney's Table 65.)

	Experimentals	Controls
I really like it	79 %	71 %
My dislikes just balance my dislikes	15	22
I don't like it but I will have to put up with it	6	7
I hate it	0	0
Total	100 %	100 %

Table R-3: Rothney's Wisconsin Counseling Study: Percentages of Responses Five Years After High School Graduation to the Question, "If you could live over again the last five years since you left high school, would you do the same things as you have done?" (Rothney's Table 66.)

	Experimentals	Controls
Yes	68 %	65 %
No	30	33
Undecided	2	2
Total	100 %	100 %

Table R-4: Rothney's Wisconsin Counseling Study: Percentages of Male Subjects in Post-High-School Training and Occupations Five Years After Graduation from High School. (Rothney's Table 60.)

	Experimentals (N=162)	Controls (N=160)
Attending college	20 %	11 %
Professional positions	4	3
Semi-professional positions or in training for them	2	7
Managerial positions	4	4
Clerical work, sales, service, or agriculture	11	18
Skilled occupations or in training for them	14	14
Semi-skilled occupations	13	15
Unskilled occupations	14	11
Armed forces	14	14
Unemployed	4	3
Total	100 %	100 %

Table R-5: Rothney's Wisconsin Counseling Study: Percentages of 201 Subjects Who Entered College and Performed at the Levels Indicated Within Five Years After High School Graduation. (Rothney's Table 61.)

	Girls		Boys	
	Exper'l (N=52)	Control (N=52)	Exper'l (N=56)	Control (N=41)
Won honors	21 %	10 %	7 %	2 %
Made usual progress	48	46	38	34
Put on probation or took longer than usual to graduate	10	15	25	17
Dropped for low grades	4	6	13	17
Left for reasons other than low grades	15	19	11	10
Currently in college	2	4	7	20
Total	100 %	100 %	100 %	100 %

Table R-6: Rothney's Wisconsin Counseling Study: Percentages of 392 Subjects Who Were Employed and Who Performed at the Levels Indicated Within Five Years After High School Graduation. (Rothney's Table 62.)

	Girls		Boys	
	Exper'l (N=106)	Control (N=98)	Exper'l (N=93)	Control (N=95)
Owned business, better jobs, faster than usual promotions	20 %	15 %	33 %	20 %
Promoted on schedule	15	13	13	14
Remained at same job level	59	67	43	49
Reduced in level or dismissed	6	5	11	17
Total	100 %	100 %	100 %	100 %

original subjects could still be reached. The following tables are condensed from tables distributed by Rothney at the APGA meeting.

Although the difference in subjects who had obtained collegiate degrees had increased from three percent to eight (compare Table R-1 with R-7), it is clear in the tables below that the differences between the counseled subjects (the experimentals) and the non-counseled (controls) were, over-all, not remarkable ten years after counseling. (Rothney did not present data at the APGA meeting corresponding to Tables R-5 and R-6.) At the meeting, Rothney himself described these results as containing little or no evidence that the experimental subjects had been influenced or aided by having been counseled, at least in respect to the variables in the tables.

The greatest difference in the above tables is the difference between the percentages of subjects in the two groups holding bachelor or advanced degrees (Table R-7): 23 percent among the experimentals held degrees but only 15 percent among the controls. By itself, this seems an important difference; if counseling efforts can direct enough capable people toward college so as to increase the number graduating from college by eight percent, it is surely worth considerable investment of effort. Confidence in this datum is weakened, however, by the fact that it is the only notable difference in a wide array of variables; among so many, this may be the chance difference which crops up every so often. Such a finding, however, is certainly worth independent verification by other investigators.

Rothney's work clearly has produced the most reliable and encouraging results of any work on the effectiveness of guidance counseling. Nevertheless, his results are far from dramatic and they badly need the support of replication, using regularly employed counselors rather than

Table R-7: Rothney's Wisconsin Counseling Study: Percentages of Subjects Ten Years After High School Graduation Who Had Completed or Were Currently Enrolled in Post-High-School Training.

	Experimentals (N=343)	Controls (N=341)
Held bachelor or advanced degree	23 %	15 %
Currently enrolled, undergrad. or grad.	5	4
Other: certificates, apprenticeships, and incompleted programs	23	24
No post-high-school training	49	57
Total	100 %	100 %

Table R-8: Rothney's Wisconsin Counseling Study: Percentages of Subjects Expressing Indicated Degrees of Satisfaction with Their Status Ten Years After High School Graduation.

	Experimentals	Controls
I really like it	81 %	77 %
My dislikes just balance my dislikes	16	19
I don't like it but I will have to put up with it	3	3
I hate it	0	1
Total	100 %	100 %

Table R-9: Rothney's Wisconsin Counseling Study: Percentages of Responses Ten Years After High School Graduation to the Question, "If you could live over again the last ten years, would you do the same things you have done?"

	Experimentals	Controls
Yes	58 %	53 %
No	37	42
Uncertain and yes-and-no	5	5
Total	100 %	100 %

Table R-10: Rothney's Wisconsin Counseling Study: Percentages of Male Subjects in Post-High-School Training and Occupations Ten Years After High School Graduation.

	Experimentals (N=162)	Controls (N=159)
Professional positions or in training for them	15 %	15 %
Semi-professional positions	6	9
Managerial positions	14	8
Clerical work, sales, service, or agriculture	24	25
Skilled occupations	17	18
Semi-skilled occupations	12	9
Unskilled workers	6	9
Armed forces	4	4
Miscellaneous	1	1
Unemployed	1	2
Total	100 %	100 %

graduate students and using schools more widely spread. Rothney's study clearly says to us that evidence of counseling effectiveness is worth pursuing farther; it does not tell us that we can yet state with any reasonable confidence what outcomes can be expected from guidance counseling as it is typically practiced.

The studies we have summarized here have offered some reasonable criteria by which the effectiveness of guidance counseling might be judged and have sought to assess the effects on these criterion variables of guidance counseling conducted in ways reasonably representative of guidance in U. S. public schools in terms of methods and staffing. Unfortunately, these studies offer only meager scraps of encouragement for the proposition that the large and burgeoning investiture in present-day guidance counseling is paying off, at least in terms of the criteria used by the studies.

Aside from the information contained in the present study, we can hope for further findings on counseling effectiveness from Project Talent; at this writing, some preliminary information from that project has been reported by Dailey (1962).

Dailey, John T. A Survey of the Use of Tests in Public High Schools. Paper presented at the 12th Annual Conference of Directors of State Testing Programs, Princeton, N. J. November 4-5, 1962.

The study to be reported in the following chapters adds some detail to the picture presented by the previous studies and extends the list of criteria against which the central question -- is today's guidance counseling effective? -- has been tested. As will be seen, the answer to the central question is not easy to pin down, one way or the other. Our sample of Illinois schools did not show a simple relation between exposure to counseling services and the criteria of effectiveness we used. Nevertheless, there are in our findings some encouraging hints. There are some suggestions here and there that even the present-day level of investment in guidance counseling can have measurable outcomes if certain further conditions exist in the school, and there is support in other literature for certain of the optimistic inferences we make later on. These matters will be discussed in the proper place.

Acknowledgments

The original data for the major portion of this study were gathered pursuant to a contract with the United States Office of Education, Department of Health, Education, and Welfare, and a preliminary technical report of the results was made to the Office of Education by Hastings, et al (1960). Further analysis of these data, as well as collection and analysis of some supplementary data, was supported by the University Research Board of the University of Illinois and by the Bureau of Educational Research. Some results will be brought into this report from a second project supported by the U. S. Office of Education which was originally reported in a technical report by Hastings, Runkel, and Damrin (1961). Brief reference will also be made to a technical report by Runkel, Hastings, and Damrin (1961) of a third project supported by the U. S. Office

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Hastings, J. Thomas; Runkel, Philip J.; Damrin, Dora E.; Kane, Robert B.; and Larson, Gerald L. _The Use of Test Results_ (Cooperative Research Project No. 509). Urbana: Univ. of Illinois, Bureau of Educational Research, 1960.

Hastings, J. Thomas; Runkel, Philip J.; and Damrin, Dora E. _Effects on Use of Tests by Teachers Trained in a Summer Institute_ (Cooperative Research Project No. 702). Urbana: Univ. of Illinois, Bureau of Educational Research, 1961.

Runkel, Philip J.; Hastings, J. Thomas; and Damrin, Dora E. _Changes in Schools Which Do and Do Not Send Staff Members to Training Institutes In Counseling_. (Cooperative Research Project No. 939). Urbana: Univ. of Illinois, Bureau of Educational Research, 1961.

of Education. Aside from the support already mentioned, further time was kindly made available to the investigators by the College of Education of the University of Illinois.

Chapter I will present a condensation of the report as a whole. Chapter II will give the design of the study in detail, the compromises made, and the like. Chapter III will describe the chief variables used in the study, their manner of measurement, and their interrelations. The remaining chapters will present in detail each group of results.

The original idea for using these data to investigate the effectiveness of existing counseling services among the schools sampled belongs to Dr. Dora Damrin, and her preliminary analysis showed that the data contained useful information on this problem. She is not to be held responsible, of course, for any outrages I may have committed in the present analysis or in its interpretation.

CHAPTER I

OVERVIEW

Does it really do any good to have guidance counselors in the school, speaking generally, and granting present staffing levels? Can we find evidence over a representative sample of high schools that having counselors makes some differences of the kind we would wish in the knowledge and choices of students? Do students choose to go to counselors for advice? Can the help of teachers be important in making guidance more effective? Do students and teachers take notice of guidance activity? What do they notice? Does a larger counseling staff tend to lead to greater satisfaction with the guidance program on the part of the faculty? These are the chief kinds of questions which this book sets out to explore, making use of the responses of a sample of students, teachers, and principals in ninety-four percent of the public high schools in Illinois which enrolled 100 or more students in 1959. This chapter is a synopsis or brief of the rest of the book.

Whatever your point of view, you will no doubt come across paragraphs in this chapter (and later, too) which annoy you. If you are a devoted believer in the worth of guidance counseling, you will surely be frustrated by the many occasions in our research when we failed to find evidence, where it might reasonably be expected to appear, for the effectiveness of counselors. On the other hand, if you tend to feel that guidance counseling is bootless, you must then be taken aback at the many occasions when we found the presence of counselors, or visits to counselors, to be associated with the kinds of outcomes for which guidance people hope. The story is neither one of triumphant vindication nor of forlorn defeat. This is all to the good, in a way, since either complete triumph or complete futility would leave us nothing more to do; the story would be finished. As it is, the contrasts between success and failure in our research offer opportunities both to practitioner and researcher -- possibilities for practical procedure to the one and suggestions for more penetrating analyses to the other.

One thing on which this study agrees emphatically with earlier investigations is that finding evidence for the effectiveness of guidance counseling is not a simple thing. Yet this should not, after all, surprise us. Human endeavors are never simple to understand and the uncertainty of their outcomes has long been the inspiration of story and song. However, the story of this study is not a song of sadness. Although some of the notes are dolorous and many are muted, nevertheless there will be cheerful passages to raise the spirits. This report would not need to be as long as it is were its only burden gloom. We shall not only find encouragement in some obvious places; we shall also find cheer in some corners not usually looked into.

If you are a professional researcher trained to the rigors of hypothesis-stating, sophisticated in the subtleties of statistics, and cautious of the delicate dangers in drawing conclusions, then I ask you to read this chapter with forebearance. The purpose of this chapter is to display the pattern of the findings, not to justify conclusions nor to string out cautious qualifications. I shall try to lay out here the more robust relations found among the data, the sharpest contrasts, and the more obvious consequences for practitioners in the schools and for researchers. I shall skim over as much as possible of method and procedure. I shall omit most of the sorties to the side of the mainstream of the narrative which are to be found in later chapters. I shall brush blithely by alternative conclusions and interpretations which in later chapters I have taken pains to explicate. Although I shall try not to be vague, it is surely inevitable that there will be sentences in this chapter which will irritate one or another reader by their meagerness. Brief explanations must sometimes seem perfunctory rather than concise and must leave this reader or that with nagging questions.

As a matter of fact, I hope you do come to the end of this chapter with questions in your mind. I hope these questions will draw you into the next chapter and the next. And I hope those chapters will lead you to ask questions in your own work, whether it takes place in a public school, a laboratory, a college seminar, or wherever.

The Plan of the Study

Before plunging into the findings of the study, there are a few points about the general design of the study and a few points of procedure which are indispensable for understanding what follows.

With certain exceptions which I shall note as we go along, the data for this study were obtained in the spring of 1959 from the public high schools in the state of Illinois enrolling 100 or more students. The bulk of the data were elicited through questionnaires received from 526 principals, 2760 teachers, and 1095 junior students. These respondents were distributed among 556 high schools. In addition to the questionnaires sent out in the spring of 1959, data concerning the curricula of the students were taken from transcripts obtained from these schools at a later time; and the scores of the students on some tests of scholastic ability (tests the students had taken in the fall of 1958) were obtained from the files of the Illinois Statewide High School Testing Program.

A number of checks were run to estimate the reliability and accuracy of the respondents' answers to various items of the questionnaires. For example, a rough estimate was computed of the percentage confidence interval for responses from each class of respondent.* Also, possible biases among the small percentages who failed to respond were estimated by comparing the answers of persons who answered quickly with those who answered only after prodding. In addition to these checks, we also compared the distributions of answers to certain of our items with distributions taken from other studies quite independent of our own. Some of these independent studies were based upon Illinois samples and some on national samples. The comparison samples will be described in appropriate places in subsequent chapters. From all these checks we concluded that our sample was an excellent representation of Illinois high schools enrolling 100 or more students. The comparisons with studies using national samples, furthermore, encourage us to believe that Illinois schools are not seriously different from those of the nation taken as a whole, at least in respect to the questions we studied.

For the most part, this study is a correlational one. That is, most of the data were collected substantially at one point in time and we can look among the data for associations between one kind of datum and another. We cannot look among these data for changes over time since the data do not provide that kind of information. The fact that most of this study is correlational means that the data can provide no direct evidence that a change in one factor produces or causes a change in another. Nevertheless, we shall come upon instances where it seems reasonable to infer a causal connection from one factor to another, even though we must always do so with caution.

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* See Table II-2 in Chapter II. (The Roman numeral in a table designation tells the chapter in which the table will be found.)

The Factors Which Ought to Make a Difference

Our central question in this study concerns the effects* of putting counselors into high schools and especially the effects on the choices, knowledge, and attitudes of students and teachers. The kinds of effects on students which we shall discuss will include the appropriateness of the educational and occupational choices made by the student, his knowledge of how much education is required for entry into his chosen occupation, and his knowledge of the abilities and skills needed for that type of work.

At the level of action, the thing which is done at the outset in order to provide guidance for students is to hire a counselor, or appoint a teacher to act in the role. At the most obvious level, then, the factor which is generally expected to have some desirable effects is that of having a counselor (defined as you will) available in the school. It is at just such a straightforward, unsophisticated level that we shall carry out our analysis of the data since our primary purpose here is to assess effects of counseling as it is presently managed. And it is presently managed by such straightforward actions as appointing someone to act as a counselor.

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* In looking for the "effects" of putting counselors into schools, we shall actually be looking for associations between having counselors in a school and the other variables such as the appropriateness of the occupational choice made by the student. We must then reason as best we can concerning the question whether the counselors actually affected the choices made by the students. Some of this reasoning will be suggested in this chapter; the reasoning is laid out in more detail in the later chapters.

It is true that guidance counselors differ in their training and in their methods of operating. We have not, however, addressed ourselves to the question of what are the best ways for a guidance counselor to carry on his work. We have limited ourselves to the question of whether counselors now at work (and not selected by us as either poor or excellent) do bring certain types of responses from students and teachers.

It is also true that counseling duties are not always reserved for persons named as counselors. One often comes upon schools where counseling duties are shared out among the faculty at large. We have taken account of such guidance activity upon the part of faculty, as will be seen later.

We indexed the availability of counselors in the school in two ways. The first way was to compute the ratio of counselors to students from data given us by the principal. This index of counselor availability we shall call the counselor-student ratio. Another way was to ask each individual student whether he had ever visited a counselor. We shall call this second index visiting the counselor. These are the two chief variables which we shall employ as predictor variables; that is, these are the factors which ought, presumably, to make a difference in the number of students making appropriate occupational choices, having reasonable amounts of knowledge about their chosen occupations, etc. When the counselor-student ratio is high, or when comparatively many students have visited a counselor, we should expect to find relatively more students who have made appropriate occupational choices, for example, and conversely.

In addition to the two chief predictor variables used to index the availability of counseling services, other "control" variables were used in the search for effects. One of these control variables was the academic aptitude of the student; two of the tests in the battery of the Illinois Statewide Testing Program were used to assess it. Another important control variable used was the average number of hours the teachers in a school spent in gathering information about students; this was ascertained through data collected from teachers. Still another was the student's report of whether teacher or counselor mentioned test results in talking to him about his future plans. All these variables were used in trying to find conditions which would predict the occurrence among students of choices, knowledge, and beliefs reasonably to be hoped for as consequences of guidance activity. Still other variables were used from time to time, such as the sex of the student and his curriculum, but these others will be discussed as we come to them. The predictor and control variables mentioned here are described in detail in Chapter III; some subtleties involved in their use are described there and some tables are given which help to put more meaning on them.

Two kinds of activity which I mentioned above as "control" variables were (1) amount of activity by teachers in seeking information about students and (2) frequency with which teachers or counselors mentioned test results in discussing with a student his plans and problems. Although we originally thought of these variables as "control" variables in the sense of providing conditions which would help or hinder the effectiveness of the counselor's efforts, the analyses soon showed that these variables were often as strongly associated with certain responses of the students as were our measures of counselor availability. We came to think of these variables as equally important with the measures of counselor availability in "predicting" the kind of response the student would give. Although we always looked first at the "predictor" variables of counselor-student ratio and visiting the counselor, the other two variables came more and more to figure in our analyses as predictor variables also. In fact, it is one of the important findings of the study that teacher activity had to be taken into account if evidence of the effectiveness of guidance counseling was to be found.

Let us begin this review of findings by turning to those which made use of the most direct criteria of counseling effectiveness which we had available.

Effects on Students' Knowledge and Choice

A number of criterion variables were explored to discover whether the availability of guidance services could be shown to have any effect upon them. By a criterion variable, I mean a condition or characteristic which could be reasonably expected to be affected by the activity of guidance counselors such as the amount of knowledge a student possesses about his chosen occupation. Not all conceivable criterion variables were explored, but we felt that those we chose represented goals which would be considered reasonable and desirable by most guidance workers.* We found that the counselor-student ratio for the matter of visiting the counselor made a difference in respect to some of our criterion variables but not in respect to all. Furthermore, it was necessary to pursue some rather complex analyses in order to find the evidence for the effectiveness of guidance which we did find. As I mentioned before, this chapter will omit many of the complexities.

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* In the first pages of Chapter IV a comparison will be found between our criterion variables and the goals of guidance as enumerated in a manual for evaluating guidance programs written by Wellman and Twiford (1961) and issued by the U. S. Office of Education.

Knowledge of Education Required by the Chosen Occupation

One of our criterion variables had to do with the knowledge the student had about his chosen occupation. Each student was asked, "What occupations have you thought of as your possible lifework?" Following this question he was asked, in regard to his first choice, "How much education is required for this type of work?" The type of answer the student gave to this latter question was taken as one criterion of counseling effectiveness. The answers of the students were categorized into answers we called "exact" and into other types. We called an answer exact if the student told the kind of instiution or training required by his occupation and the number of years he would have to spend in training.

After taking into account the academic aptitude (call it intelligence, if you will) of the student, we were unable to find any significant relation either between this criterion and the counselor-student ratio of the school or between the criterion and whether the student had visited a counselor. However, when activity on the part of the teachers in the school was brought into the picture, significant relations appeared between one of the predictor variables and the exactness of the answer the student gave concerning the education required by his occupation. We had asked teachers how often they took time out to gather information about students, and we converted their answers to an approximate indication of the number of hours per semester they spent seeking information about students. From this index, in turn, we computed a mean figure for each school to represent the general level of activity on the part of teachers in the school in seeking information. When students were categorized both according to the level of information-seeking activity by teachers in their schools and by whether they had visited a counselor, significant relations appeared between these variables and the criterion variable even when the academic aptitude was taken into account.

We found, that is, that visiting the counselor and being in a school with teachers active in seeking information made a difference in the percentage of students giving exact answers concerning the education required for their occupations. Furthermore, we found that the differences were strongest among students in the lowest third of the academic-aptitude distribution; and there were no significant differences at all among students in the highest third on academic aptitude. Figure I-1 shows the results for students in the low and middle thirds of the academic-aptitude distribution. It can be seen in the figure that the percentages in general rose if the student had visited a counselor and also if teachers in the school were more active in seeking information.

The effects were somewhat different for students of low academic aptitude as compared with students of middle academic aptitude. Among students of low academic aptitude, percentages of students giving exact answers were greater in the schools with the more active teachers regardless of whether the student had visited a counselor. Among students of middle academic aptitude, percentages of exact answers were higher if the student had visited a counselor regardless of the activity of the teachers.

In other words, both these factors (visiting the counselors and teacher activity in information-seeking) were significantly related to the exactness of knowledge the student had about educational requirements, but

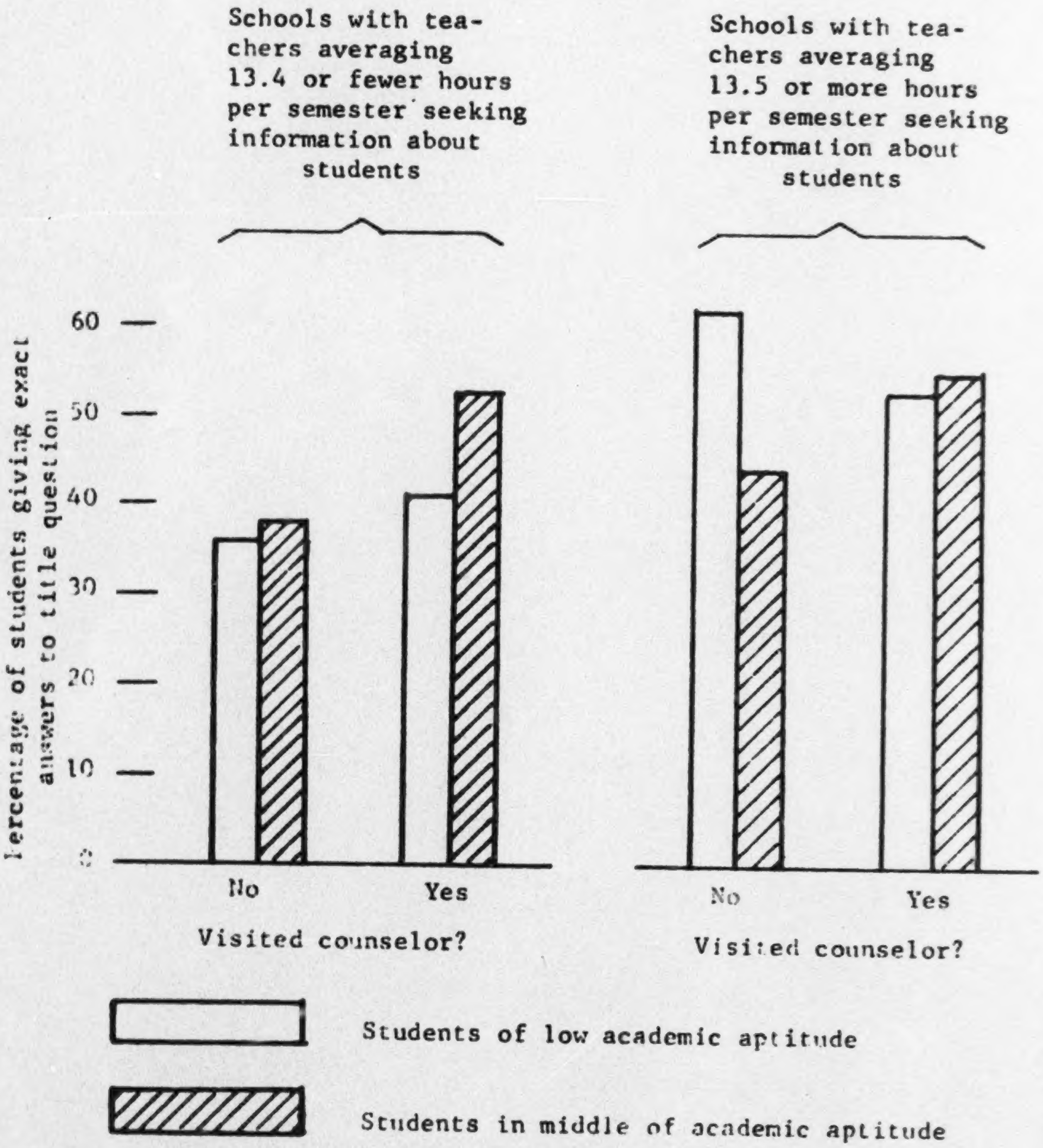

Figure I-1. Percentages of Students Who Gave Exact Answers to the Question, "How Much Education is Required for This Type of Work (student's first occupational choice)?" Classified by Level of Academic Aptitude of Student, Whether Student Had Visited a Counselor, and Frequency of Information-Seeking by Teachers. (Constructed from the figures in Table IV-7.)

they were important among different segments of students. Visiting the counselor seemed to be more important for students of middle academic aptitude than did the activity of the teachers, but the importance of the two variables was the other way round for students of low academic aptitude. In contrast to these two groups of students, the students high in academic aptitude profited from talking neither to teachers nor to counselors. As might be expected, the percentage of students high in academic aptitude giving exact answers concerning the education required for their chosen occupations was higher than the percentages occurring either among students in the middle or low ranges of academic aptitude. Details of these results will be shown in Tables IV-1 through 7.

This first finding is something of a prototype for many findings throughout the book. The finding gives evidence for our chief concern -- the effectiveness of counseling -- but it reveals more than that. It points to the fact that the guidance activity of teachers is an inseparable part of the picture of guidance effectiveness, a conclusion which will be thrust upon us again by later findings and which will be reviewed in Chapter XII. Our first finding also points to differential effects on different parts of the student body, in this case parts distinguished by academic aptitude. It is to be expected that students of higher academic aptitude would turn out to have more knowledge about their chosen occupations than would students of lower academic aptitude, but it is especially instructive to find that the efforts of counselors and teachers had very different effects among students of higher and lower aptitude. The percentage differences among students in the lower third of academic aptitude (differences, that is, in percentages giving exact answers about required education) were statistically significant and large enough to have practical importance. The differences among students in the highest third of academic aptitude, on the other hand, were not statistically significant; they could easily have been due to the vicissitudes of sampling. Differences in the effects of guidance activity showed up not only among students of differing academic aptitude, but also among students of differing curriculum, occupational choice, and sex, as we shall see later. These and other matters are discussed more fully in later chapters, where they can be illuminated by accumulated evidence and by detailed displays of data. Differences among students in different curricula, in particular, will be discussed in Chapter X.

High-Aptitude Students in College-Preparatory Curricula

A second criterion variable which produced significant results was that of the proportion of students of high academic ability who were enrolled in college-preparatory curricula. It is easy to discover both in educational and lay literature these days a sentiment for coaxing every possible student of high academic aptitude into college. To see whether this sentiment was being reflected in the work of guidance counselors, we examined our data to see whether the proportions of high-aptitude students in college-preparatory curricula were greater in schools of high counselor-student ratios than in schools of low. A trend was discernible, as is shown in Figure I-2. Actually, the percentages shown in Figure I-2 were not significantly different from each other by statistical test; it was necessary to carry out some further analyses before statistical significance was found. It turned out that significant differences appeared only among females and not among males. (These later results are to be seen in Table V-4.) All in all, these results are rather weak support for a hypothesis

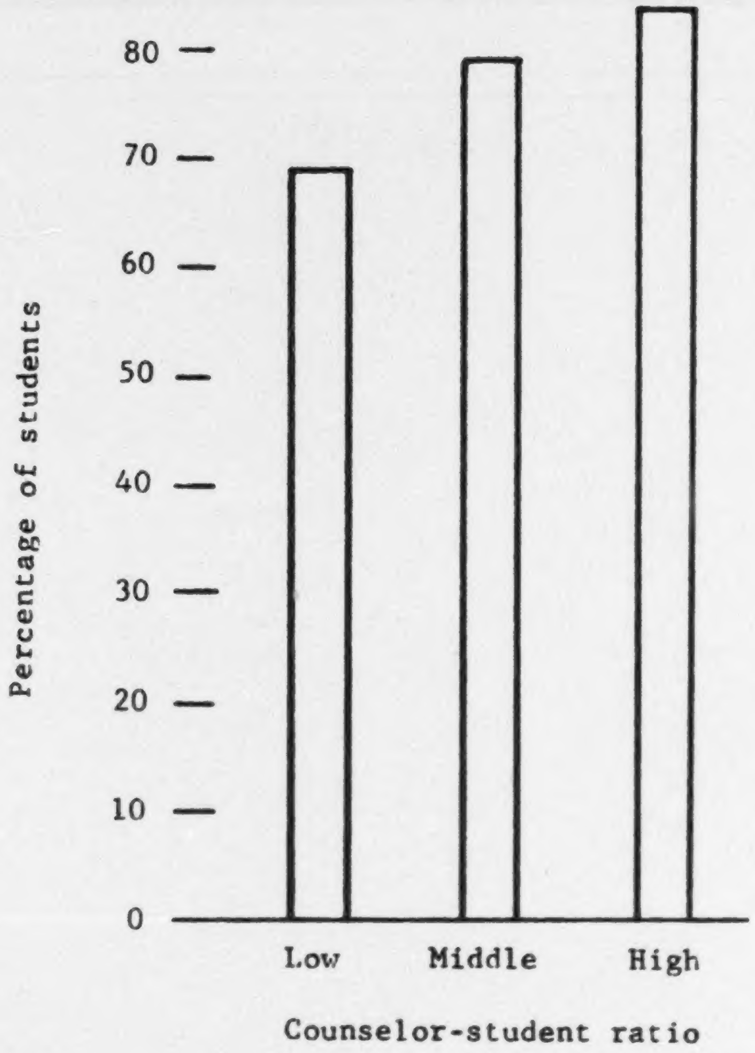

__Figure__ __I__-__2__. Percentages of Students of High Academic Aptitude Who Were Enrolled in College-Preparatory Curricula, Shown for Three Ranges of Counselor-Student Ratio. (Constructed from the figures in Table V-1.)

that counselors are trying to maximize the proportion of high aptitude students being set upon the path toward college.

For the reader who has other comparative figures in his head, the proportions shown in Figure I-2 need some clarification. In this report, "high academic aptitude" is defined to mean a score on the combined Abstract and Verbal tests of the Differential Aptitude Tests battery falling in the upper third of the statewide distribution in Illinois. Characteristics of these tests from the Differential Aptitude Tests will be given in Chapter III. Whether the student was in a college-preparatory curriculum was determined by a study of each student's transcript by two trained judges.* The percentage of males of "high" academic aptitude in college-preparatory curricula was 77 and the percentage of females was 80.

There is a current argument that the nation is losing a great amount of talented man power because too many young people of talent do not go on to college. If efforts and policies were to follow this complaint, it is clear that special attention should be given to capturing talented males since they will spend a much greater proportion of their working years in the professions for which they are trained than will females. Yet our results show that, if counselors are indeed exerting any effort to increase the proportions of high aptitude students in college-preparatory curricula, they are succeeding with females and not with males. These matters and others will be discussed in Chapters V and VI.

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* The difference between the designations given to curricula by the judges and those given by the students themselves can be seen in Table V-7.

Appropriateness of Occupational Choice to Ability Test Scores

The third criterion variable which showed some effects of guidance activity was that of the appropriateness of the student's occupational choice to his abilities as assessed by the tests of the Illinois High School Statewide Testing Program. This appropriateness was judged by two trained judges, as will be explained in Chapter V. Here again, no significant relation could be found in the simple two-variable relation between the criterion variable (appropriateness of occupational choice) and either of the predictor variables of counselor-student ratio or visiting the counselor; but significant relations did appear when a variable involving the faculty at large was added; namely, that of talking with teachers about test results.*

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* The questionnaire item used for this latter variable was "When discussing your future plans with teachers or with a counselor, do they ever mention the scores you made on standardized tests?" Even though talking with counselors was included in the item, evidence will be presented in Chapters III and following to show that replies to the item were heavily weighted on talking with teachers.

As in the case of the student's knowledge about the educational requirements of the occupation, the present criterion variable (appropriateness of the occupational choice to abilities assessed by tests) also showed effects from the availability of guidance counseling among students of low and middle academic aptitude but not among students of high academic aptitude. Figure I-3 displays the results. We see there that effects were evident both from the counselor-student ratio of the school and from the amount of talking with teachers about test results. Among students of low academic aptitude, we see that students in schools with the higher counselor-student ratios showed a greater percentage of appropriate occupational choices than students

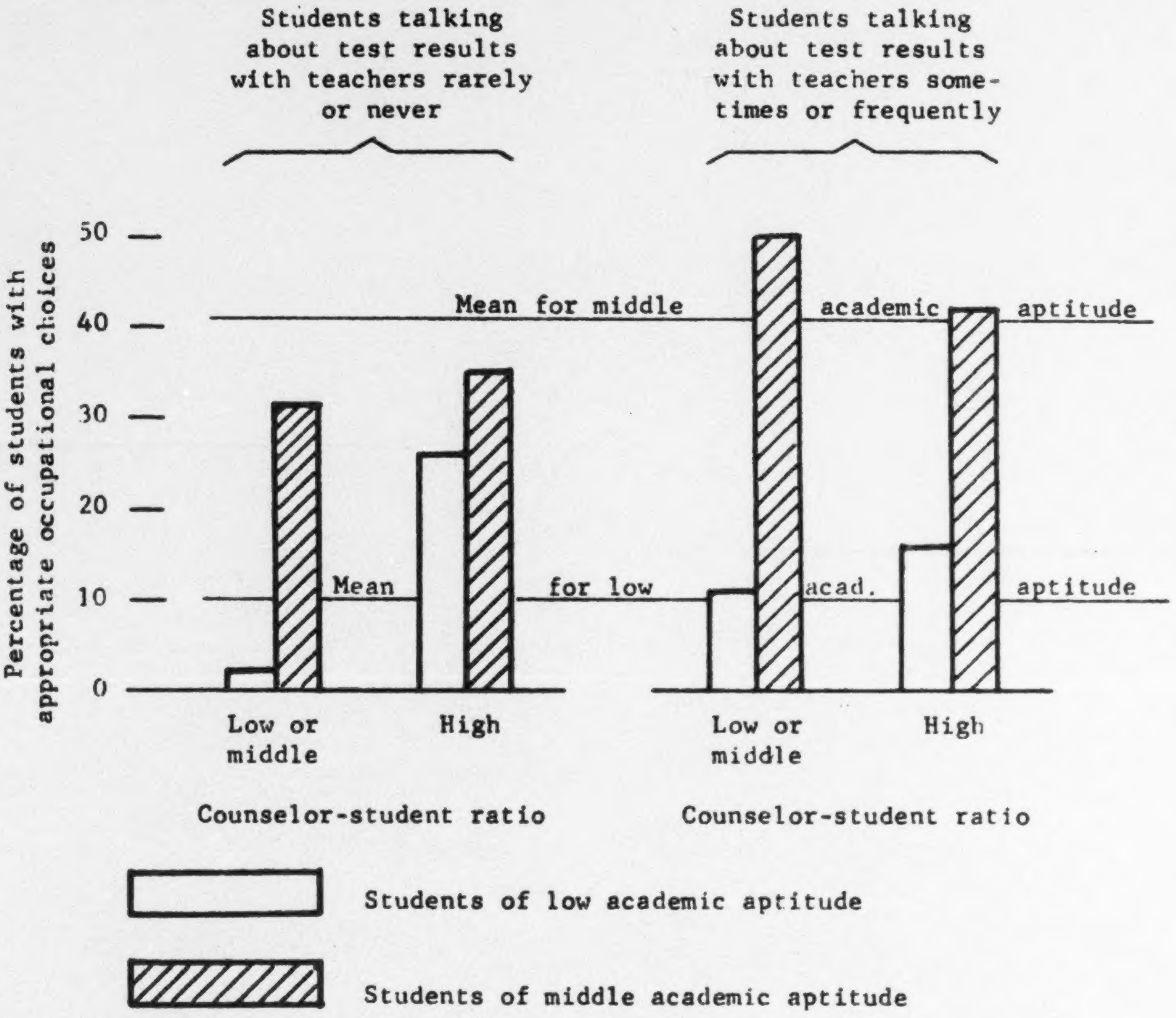

Figure I-3. Percentages of Students Judged to Have Chosen Occupations Appropriate to Their Scores on Tests of the Illinois Statewide High School Testing Program, Classified by Level of Academic Aptitude of Student, Counselor-Student Ratio of School, and Frequency of Talking with Teachers About Test Results. (Constructed from the figures in Table V-15.)

in schools of lower ratios, regardless of the amount of talking the students did with teachers. Among students of middle academic aptitude, the percentages of appropriate occupational choices were greater if the students had talked about test results more frequently with their teachers, regardless of the counselor-student ratio in the school.

Some further subtleties in regard to these results will be discussed in Chapter V in connection with Tables V-12 through 19. In the course of the discussion there, a third predictor variable -- information-seeking on the part of teachers -- will be added to the analysis. A pattern will then emerge showing that counselor-student ratio was an effective variable both among students of middle academic aptitude and among students of low, but that the variable of discussing test results with teachers was more important among students of middle academic aptitude while the variable of information-seeking by teachers was more important among students of low academic aptitude. In speculating upon this pattern of results, one might entertain the hypothesis that most of the students of high academic aptitude find occupations suited to their abilities pretty much without regard to the help formally offered by the school; the middle-aptitude students profit somewhat from specific discussion of abilities and test scores; and the low-aptitude students are aided by more general and possibly less technical discussions of their future. These results will be discussed in more detail in Chapter V.

The three criterion variables so far described are those which showed significant relations with counselor-student ratio or with visiting the counselor. To recapitulate, they were (a) knowledge of the education required for the chosen occupation, (b) the proportion of high-aptitude students enrolled in the college-preparatory curriculum, and (c) appropriateness of occupational choice to abilities as assessed by the tests of the

Illinois Statewide High School Testing Program. I should repeat that the relations found were not simple and direct, but appeared only after some further variables were applied to the analysis.

We investigated three other criterion variables: (a) knowledge of the duties in the chosen occupation, (b) knowledge of the abilities and skills needed in the occupation, and (c) the appropriateness of the student's occupational choice to his curriculum. These variables showed no significant relation to counselor-student ratio or visiting the counselor, even when examined within groups of students selected by the use of some of our other variables. These criterion variables did show some interesting relations, however, with such other variables as curriculum, sex, occupational choice, and academic aptitude; and the first mentioned (i.e., knowledge of duties in the chosen occupation) deserves particular remark.

Knowledge of Duties in the Chosen Occupation

Students' answers to the question, "What does a person in this type of work actually do?", asked in reference to the students' first-choice occupations, were examined for their specificity. We were unable to find any manner in which the availability of guidance services would predict the specificity of the students' answers to this question. However, we turned up an interesting relation between answers to this criterion question and the length of time the student had before him before he could enter upon his chosen occupation.

Some occupations require four or more years of training beyond high school before the young person can undertake the duties the occupation demands. Other occupations are much nearer the high school junior in time; some can be begun immediately after high school or after perhaps a year of further training or apprenticeship. We distinguished between these two types of occupations by referring to the former as "far" occupational goals and to the latter as "near" occupational goals. In one analysis we made sure of picking out students with far goals by selecting those in college-preparatory curricula who had chosen occupations in science, medicine, teaching, and other professional or sub-professional occupations. Against these students we compared others who had chosen near occupational goals; namely, students in other curricula who had chosen occupations which could be entered immediately or very soon after high school graduation. The percentages of these groups of students giving specific answers concerning the duties of the occupation are shown in Figure I-4 (females and males are shown separately). It can be seen in the figure that the differences in the percentages are striking.

Chapter IV contains some discussion of the findings concerning near and far occupational goals. The findings appear, at first glance, to be saying that the students who were facing the longest and most costly preparation for their occupations were those who had the vaguest picture of what the occupation would ask of them when they entered upon it. This seems an unenviably risky position to be in. For reasons to be explained in Chapter IV, however, I shall suggest that "going to college" may very well be a reasonable enough "occupational" goal for many high school students. In order to reduce false starts in college, the high school counselor might concentrate on teaching the college-bound student the duties and disciplines which will be demanded of him by his college rather than devoting much attention to the duties which will be demanded of the student by his tentatively chosen occupation.

Serendipity gave us still another interesting finding among the answers concerning "what a person in this type of work actually does."

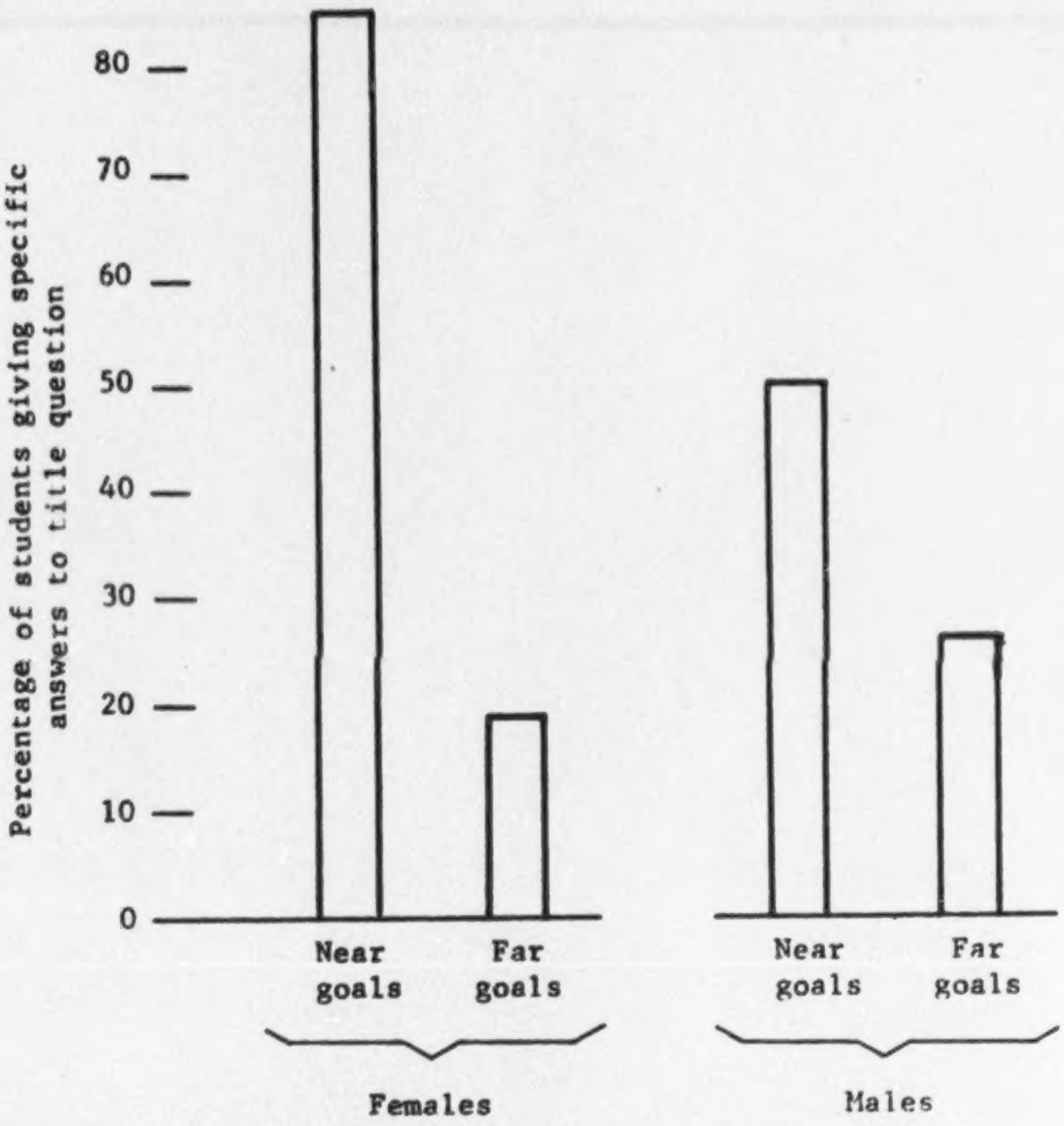

Figure I-4. Percentages of Students Among Those with Near and Far Occupational Goals Who Gave Specific Answers to the Question, "What Does a Person in This Type of Work Actually Do?" Shown Separately by Sex. (See text for explanation of near and far goals. Constructed from figures in Table IV-19.)

One classification of response we used was that of values or ideals. We put answers into this category if they did not describe particular actions but instead described the goals of the actions -- in the sense of values or ideals which the occupation itself should try to achieve. For example, suppose a boy wanted to become a science teacher. Asked what science teachers "actually do," he might say, "Explains to boys and girls and shows them with laboratory experiments how science is in things all around them." Such an answer would have been categorized as specific. But suppose he had said, "Helps boys and girls to know how important science is." This would have been categorized as a value answer because it does not mention any activity peculiar to teaching; it expresses instead a goal or ideal which a teacher can hold.

We found (see Tables IV-23 and 24) that those students who chose teaching as a future profession more frequently gave value answers than did students choosing other occupations. These results seem to agree with those of Biddle, et al (1962) who, studying college students and practicing teachers, found that college students in preparation for teaching gave more idealistic descriptions of the role of the teacher than did non-education students or practicing teachers. In Chapter IV and again in Chapter VI, I shall discuss the implications of these findings for recruiting teachers.

To recapitulate, out of six criterion variables tested there were three which did give us evidence in support of the effectiveness of guidance counseling; namely:

1. Exactness of students' knowledge about educational requirements of the chosen occupation (cf. Table IV-7).
2. Proportion of high aptitude students enrolled in college-preparatory curricula (probably holds for females only, cf. Table V-4).

3. Appropriateness of the student's occupational choice to his abilities assessed by tests (cf. Table V-19).

In short, the "density" of the evidence was fairly low. One way of putting the results into a nutshell is to say that evidence for the effectiveness of guidance counseling can be found if one looks far enough. At the same time, there is no doubt that significant findings occurred among our data very much more often than one could expect to find by chance. There are three important conclusions from this part of the study. First, evidence for the effectiveness of guidance as typically practiced today is not easy to find. When found, it is not simple; it lies in the complex interrelations of a number of variables. Second, evidence that guidance is effective in one respect (i.e., according to one criterion) cannot be taken as an indication that guidance is effective in another. Third, although our data cannot help anyone in the argument current among guidance people concerning the exact degree to which guidance responsibilities should be parceled out among the faculty, our results do abet those who urge that the faculty undertake some amount of guidance activity in coordination with the work of the counselors.

In addition to these conclusions, our results raise some interesting questions. These have to do with the possible distribution of the efforts of counselors among students of varying academic aptitude, the degree to which they should strive to capture students of high academic aptitude for college, the abilities and proclivities of students to which counselors should pay attention, and other matters. These questions will be taken up at various points in Chapters IV, V, and VI.

Improving Counseling Effectiveness

The fact that guidance activities have differential effects under different conditions of faculty support and among different segments of the student body raises questions about what the school administrator can do to facilitate the work of the guidance counselor. Some suggestions for the administrator will be given in Chapter VI along with some data to support the suggestions. In brief, the suggestions are:

1. Begin the change process by obtaining a couple of persons very highly trained in guidance and testing.
2. The next step is to spread some of this kind of knowledge and skill throughout the whole faculty.
3. Keep turnover among the counselors to a minimum. Their best opportunity for influencing the faculty takes some years to develop.
4. When you are ready for the stage of increasing the competence in the faculty at large, take pains to get all communication channels as wide open as possible, both from counselor to teachers and among teachers.
5. From almost the very beginning, set up routines which will draw frequent, recurring attention to matters of guidance and testing generally and to the work of the specialists in your school in particular.

The research findings supporting these recommendations (and putting more detail upon their meaning) will be found in Tables VI-3 through 13. In discussing the recommendation mentioned last in the list just above, some remarkable contrasts will be displayed between the influence of persons trained at a summer counselor-training institute held in 1959 at the University of Illinois and the influence of persons trained elsewhere.

Awareness of the Testing Program

We have seen that it was not easy to find evidence of the outcomes of guidance counseling among the responses of students. But perhaps we were expecting too much. Perhaps we should have been satisfied, at the outset, to look for less ultimate effects. After many months of probing the data for evidences of guidance effectiveness, it occurred to us that we might turn back to the beginning of the guidance process and ask a simpler question about a necessary precondition. We might ask simply whether students noticed that anything was going on.

After all, even if a person to whom you are speaking does not fall in with your desires, or even if he does not understand what you are saying to him, nevertheless you customarily expect him to notice that you are speaking to him. Particularly when he ignores your suggestions, you are likely to ask, "Were you listening?" Even if the responses of students might not take the trend which one would hope to see where there were relatively more counselors available or where students conferred with counselors more often, nevertheless one should certainly expect to find that where counselors were more readily available larger percentages of students would be aware that guidance activity was going on. It should certainly not be over-optimistic to hope that manifestations of guidance activity would be noticeable and reportable by students, and that more students would be able to report such activity where more manpower for guidance was at work. Chapter VII looks into this hypothesis.

In examining the extent of student awareness of guidance activities, we turned our attention to guidance activities which were in one way or another connected with the use of test results. The reason for this was that our study was designed from the outset to focus more upon the use of test results than upon other aspects of guidance. As will be seen, however, we did not seek any subtle or technical knowledge on the part of students about the handling of test results in the school; the matters about which we sought the students' knowledge were only the most palpable sort.

In general, it turned out that counselor-student ratio or visiting the counselor was related to some of the aspects of testing activity in the school, though not to all of the aspects which we investigated. Visiting the counselor turned out to be significantly related only to one of our criteria, that of awareness that the school administered standardized tests; but visiting the counselor was not sufficient by itself. Students more aware and less aware of test administration could be significantly separated only by looking at whether the student had visited a counselor along with his frequency of talking with faculty about test results (Tables VII-4 and 5). It also turned out that college-preparatory students were generally more aware of test administration than students in other curricula (Tables VII-6 and 7). This finding suggested that we apply our original hypothesis to students in different curricula. We then found a sharper result among students who were not in the college-preparatory curriculum. Among these students, awareness that the school administered standardized tests tended to be more frequent among students who had visited a counselor than among those who had not, even without regard to talking with faculty about test results (Tables VII-8 and 10); and this tendency was strongest among students of low academic aptitude.

When asked whether the school participated in the Statewide Testing Program, students who reported more frequent talking with faculty about test results showed themselves to be more aware that the school did participate than students who reported less frequent discussion of test results with faculty (Tables VII-14, 15, 16). Neither counselor-student ratio nor visiting the counselor was found to be related to this criterion (Tables VII-12 and 13).

Students were asked whether the school gave test results to parents and the correctness of their responses was examined. In addition, students were asked in what manner test results were conveyed to parents; and an analysis was made of the responses which indicated that test results were conveyed to parents in structured and regulated ways. That is, we were interested in those schools which, in contrast to schools which merely made test results available if the parent cared to ask, went to some trouble to get test results to parents in such form or by such means that they would be more readily understandable and useful. Then, given such a "regulated" manner of conveying test results to students, we looked into the data to ascertain the extent to which students were aware of any of the procedures used by the school in conveying test results to parents.

Counselor-student ratio was found to be strongly related to correctness about both these matters (whether and how test results were conveyed) and so was frequency of talking with faculty about test results (Tables VII-19, 20, 21, 24, 27, 28, 31). These two criterion variables about conveying test results to parents were not, however, related to visiting the counselor (Tables VII-22, 23, 29, 30). In explanation of this pattern, the hypothesis was offered that an indirect effect of counselor-student ratio was operating; that is, more activity by counselors spurred more activity in the faculty at large, and this in turn had its effect on the sensitivity of the students to the testing program.

Our final criterion was the awareness of students of the manner in which test results were conveyed to *them*. This awareness was not found to be significantly related to counselor-student ratio when the relation was sought within categories of curriculum crossed with categories of talking to faculty about test results (Table VII-39). Nor was awareness of this feature of the testing program significantly related to visiting the counselor (Tables VII-40 and 41). This criterion was found, however, to be significantly related to frequency of talking to faculty about test results even when the analysis was controlled both for academic aptitude and curriculum (Table VII-42); the relation was strongest among students of low academic aptitude and among students not in college-preparatory curricula.

Let us recapitulate the predictor variables which were found to be significantly related to our criterion variables concerning awareness of the testing aspect of the guidance program. Counselor-student ratio was related to two criterion variables: awareness of whether test results were given to parents and awareness of the manner in which they were conveyed. Visiting the counselor was related to one criterion: awareness of whether the school administered standardized tests at all. Frequency of talking to faculty about test results, however, was related to all the criteria. It was sufficient in itself to predict two of them (whether school participated in Statewide Testing Program, and manner of conveying test results to students). Moreover, it was a necessary multiple predictor for a third criterion (whether the school administered standardized tests). And in regard to the two remaining criteria (whether the school gave test results to parents and the manner of doing so) the variable of talking to faculty about tests was related to these criteria also. That is, in regard to these last two criteria, awareness could be significantly predicted either from counselor-student ratio or from talking with faculty.

We can conclude, it seems to me, that counselor activity showed some evidence of being associated with awareness of students about aspects of the testing program. Beyond this, however, it is again impressive that an index of guidance activity on the part of the general faculty showed up throughout the results as having important effects on the responses of students. Again the implication is clear that the design of guidance services should carefully consider the possible functions of teachers in the total effort.

Confidants

A vital part of the operation of a guidance program is, of course, the actual visits and conversations between student and counselor, since it is through this channel that the greater part of the instruction, aid, and influence from counselor to student must flow. As we have already seen, the fact of whether the student had ever visited a counselor was used throughout our analyses as one of the primary indices of counselor "accessibility" -- that is, as an index of whether guidance services were actually being brought to bear upon the student. We shall see in Chapter III that schools varied considerably in this respect. Based on our sampling of about 30 students from each of 38 schools, the median percentage of junior students in the school who reported that they had at some time visited a counselor was 63 percent; Table III-7 exhibits the variability of schools around this median. The main body of Table III-7 is reproduced below:

Percent of students visiting counselor	Number of schools
87 - 96	3
77 - 86	4
67 - 76	7
57 - 66	8
47 - 56	3
37 - 46	7
26 - 36	6
Total	38

A conference between student and counselor can be originated either by the student or by the counselor, and so far we have ignored this matter, paying attention only to whether the conference took place. An important part of the potentiality of a guidance program, however, must certainly be represented by the attraction students feel toward the counselors in the school. The question arises, that is, whether students would tend to initiate conferences with counselors -- whether students who wish to talk about their plans and problems would think of the school counselor as an appropriate person with whom to discuss these matters. The readiness of the student to think of the counselor as a confidant, in brief, would seem to be one of the intermediate effects (intermediate, that is, in the sense of leading to more ultimate goals of guidance) for which one would hope from a guidance program.

Chapter VIII will present some evidence which argues strongly that the counselor-student ratio of the school was associated with the kind of confidant chosen by the student with whom to "talk over his plans and problems." Two questions from the student's questionnaire were used in combination: "When you want to talk over your plans and problems with someone, to whom do you usually go?" and "Is there anyone in school with whom you talk over your plans and problems?" Students were categorized according to (a) whether they mentioned a counselor as confidant in answer to either of these questions, (b) whether, if not a counselor, they mentioned some other faculty member, and (c) whether they mentioned no faculty member at all. Students in schools of the higher counselor-student ratios were found to name counselors as confidants more often than students in schools of lower ratios even when the analysis was controlled for academic aptitude (Table VIII-10). It was also discovered that this association was stronger among students whose curriculum was appropriate (in one sense) to their academic aptitude levels; in fact, a significant relation did not exist among students whose curriculum was not appropriate. (For purposes of the analysis, the college-preparatory curriculum was taken to be "appropriate" for students in the upper third of the academic-aptitude distribution and other curricula were taken to be "appropriate" for students in the middle and lower thirds of the academic-aptitude distribution.*)

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* As I shall explain at greater length in Chapters V and VIII, I took this operational definition of "appropriateness" not to imply that I necessarily advocate a policy of encouraging such "appropriate" curricular choices, but rather because the definition seems to reflect the implications of the currently popular "search for talent."

These results argue that more students felt attracted toward counselors as confidants -- and possibly did more often confide in them -- where counselors were, in fact, relatively more available. They also suggest that the student being in an "appropriate" curriculum was associated with his preferring a counselor to a teacher as a confidant if relatively more counselors were available; this preference in connection with the availability of counselors did not occur to a significant extent among students in "inappropriate" curricula.

What Students Believed Faculty Knew About Them

Since counselors and teachers dealing with individual students must seek to understand the individual case, it seems reasonable that another "intermediate" goal of guidance would be that students who had experienced counseling would be more likely to feel that they were known to (or understood by) their teachers than would students who had not been reached by counseling. We investigated the perceptions students had of what knowledge their teachers had about them as an index of this "intermediate goal" of guidance and also because of the intrinsic interest of the question.

The results to be displayed in Chapter IX argue that students seemed to feel there were large gaps in what teachers knew about them. Fifteen to 22 percent of the students said that none of their teachers knew about their interests or their ambitions and aspirations; and 42 to 81 percent said none of their teachers knew about their artistic abilities, their family and home life, or their fears and worries (Table IX-1). In answer to another question, 75 percent of the students said that teachers did not spend enough time getting to know their students.

Eight kinds of information were named to students, including those mentioned above; and they were asked to indicate what portion of their teachers had each kind of information about them. Responses in connection with none of these kinds of information showed any singificant relation to the counselor-student ratio of the school. However, responses in connection with four of these types showed significant relations to visiting the counselor (Tables IX-2 through 5). The relations were fairly strong. In respect to these four types of information (interests, aspirations and ambitions, family and home life, and fears and worries), students who had visited a counselor more often felt that at least a few of their teachers had the information about them than did students who had not.

In respect to information about family and home life, the relation with visiting the counselor was especially strong among students of low academic aptitude in college-preparatory curricula and among students of high aptitude in other curricula, while it was especially weak among high-aptitude students in college-preparatory curricula and among low-aptitude students in other curricula. This result seems to suggest that counselors might have been discussing family matters with students whom they considered to be in inappropriate curricula but might not as often have been discussing these matters with the students they considered to be in appropriate curricula.

Effects on or from Teachers

What would we find to be different if we were to travel from a school of low counselor-student ratio to a school of high ratio? Up to this point, we have been on the lookout for differences in the choices, knowledge, and attitudes of students, comparing those who presumably had relatively easier access to counselors with those who had less easy access. But, still having in mind the guidance activities in these schools, what other differences might we find? Did teachers in schools of the higher counselor-student ratios spend more hours gathering information about students than teachers in schools of lower ratios? Was the educational level of teachers different in the two kinds of schools? Were there differences in the amount of information about students easily available to teachers? Were teachers in the one kind of school in closer contact with parents than were teachers in the other kind? Chapter XI will turn to these and other questions and will present data taken from the questionnaires answered by teachers and principals. In Chapter XI we turn from a direct concern with counselors and students to a concern with those others in the school who also are intimately involved in the guidance enterprise -- the teachers. We shall be looking for two kinds of information.

First, we shall be looking to see whether the attitudes and practices of teachers in schools of high counselor-student ratio provide a setting or atmosphere for carrying on guidance activity which is different from that found in schools of low counselor-student ratios. We have already seen evidence that relevant activity of teachers can give important help or hindrance to the work of counselors. We shall now be using other items from the questionnaires of teachers and principals for further evidence of this kind of interaction.

Second, just as we were interested in the awareness of guidance activity on the part of students, so we shall now be on the lookout for the perceptions held by teachers of the conditions which exist in their schools for carrying on guidance activity.

Chapter XI departs in another way from the strategy of earlier chapters. Size of school will be used along with counselor-student ratio in classifying schools. The reason for this is that the two variables are tied together in many ways, such as in the fact that both are intimately connected with the size of the school budget. Because size of school was only moderately related to counselor-student ratio, however, it added some detail to the picture as we went along. Actually, size of school, counselor-student ratio, and level of education of the faculty formed a cluster of three positively interrelated variables; a school which was high on one of these variables was most likely high on the other two also.

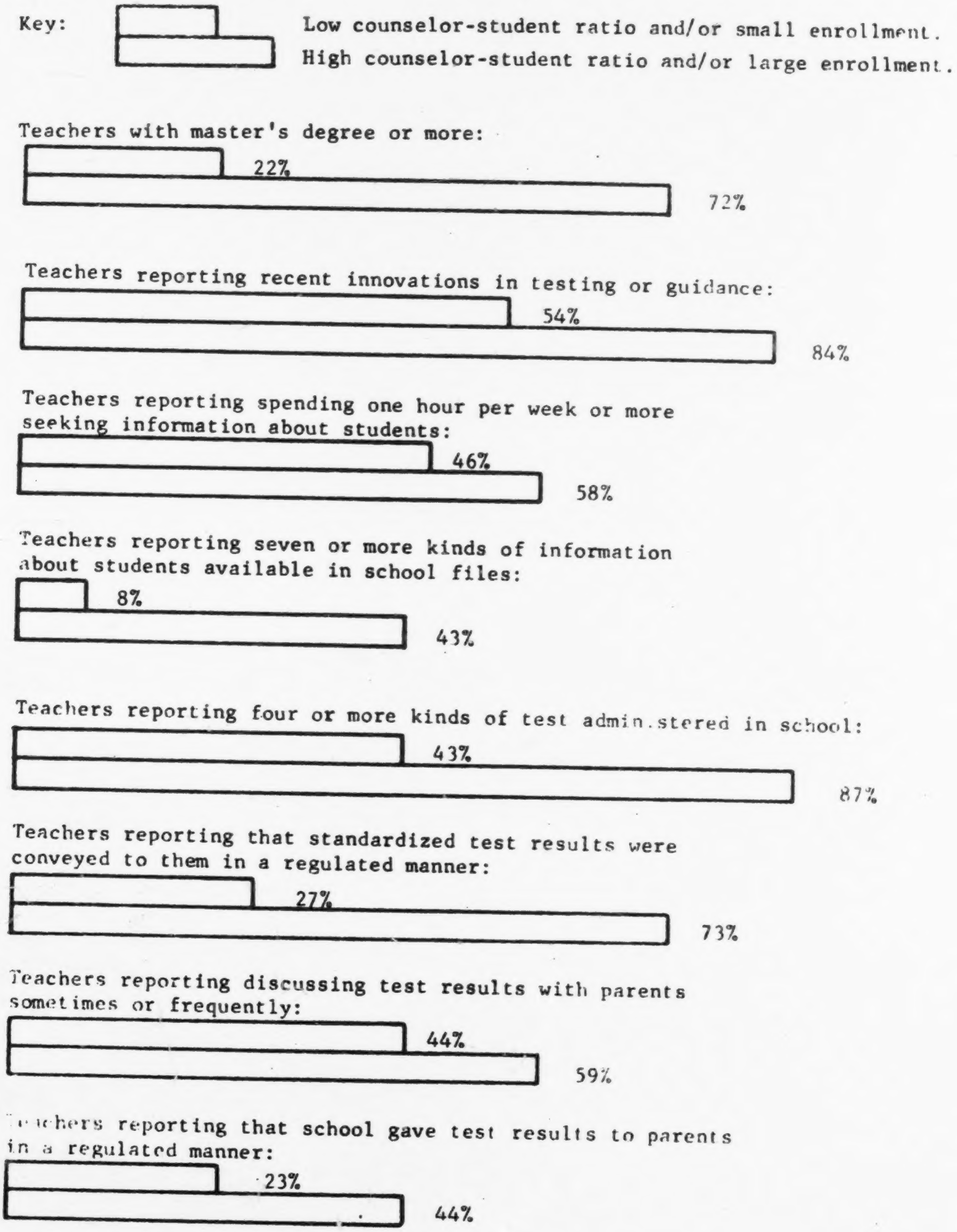
Practices and Attitudes

In examining what teachers and principals told us about their schools, the first important lesson which stands out is that the schools of higher counselor-student ratios (and/or of large size) did differ sharply in many ways from the schools of lower ratios (and/or of small size). This is important because it makes clear what, after all, we should have expected: that schools with relatively more counselors are not merely that. They are different kinds of schools from schools with fewer counselors. (The summary tables are Tables XI-1, 25, 26, and 40.)

The general picture was that the schools high in counselor-student ratio (and/or of large size) were, in comparison with other schools, more visibly active in guidance matters. The schools in our higher classifications of counselor-student ratio and enrollment provided more kinds of information in the school files, administered more kinds of tests, and were carrying out more changes in their guidance programs. The teachers more frequently sought information about their students. More of these schools gave test results to parents than did schools in the lower classifications, and teachers in these schools more frequently discussed test results with parents. These schools took more trouble to convey standardized test results to teachers and to parents in systematic or controlled ways. Some of these differences are shown graphically in Figure I-5.

Preferences among methods for getting different kinds of information were not uniform throughout schools of different counselor-student ratios. Teachers in schools of the higher counselor-student ratios, in comparison with those in schools of the lower ratios, even more frequently preferred the most popular method of getting information about students;

Figure I-5. Percentages of Teachers in High and Low Classifications of Schools Who Gave Certain Indicated Types of Responses. (Drawn from figures in Table XI-1.)



namely, that of checking school records. However, they were less often confident that the otherwise most popular method, observing the student, was one of the best. They were even more dubious than other teachers about the least popular methods: asking other students and asking other adults. One particular finding was that teachers in schools of higher counselor-student ratios less frequently mentioned administering a test as one of the best ways to get information about intelligence than did teachers in schools of lower counselor-student ratios.

Among teachers in schools of low counselor-student ratio, there were many instances of a particular method for obtaining a particular kind of information being chosen less often by teachers with more years in teaching than by teachers with fewer years in teaching. That is, in schools of low counselor-student ratios the teachers with more years in teaching tended to pick fewer methods as "best," whatever the kind of information sought about students, than did teachers with fewer years' experience. Although this tendency was general over methods and kinds of information, the comparative reluctance of the "older" teachers to choose a method as one of the best was especially marked in the case of "ask other teachers" and "administer a test." But among teachers in schools of high counselor-student ratio, the instances of differences between "older" and "younger" teachers were very much fewer.

In sum, schools with relatively more counselors were typically different in many ways from schools with relatively fewer counselors. They were different in the information about students which was made available by the school, they were different in respect to the methods used in disseminating the information and in the uses the teachers made of it, they were different in respect to methods preferred by teachers for getting different kinds of information about students, and they were even different in respect to the degree that the more experienced teachers differed in their preferences for methods of getting information from the less experienced teachers. Most of these differences between schools of higher and lower counselor-student ratios were in a direction which must have impressed the teachers in the high-ratio schools, relatively speaking, with the bustle and enterprise to be seen in their schools in matters of guidance.

The differences we found were obviously visible differences showing that the schools in our higher classifications were more busily "doing things" about guidance than were the schools in our lower classifications. But a man can dig furiously without deepening the hole by much, and our results described earlier show that it was difficult to find places where the hole had been dug deeper. The difficulty of finding evidence for the effectiveness of guidance activity, combined with the strong differences between schools of higher and lower counselor-student ratios, raises the question of whether people are being misled by "the show of things" into thinking that progress is being made toward the goals of guidance where in fact this is not so. This question leads to the second important point to be discussed in Chapter XI.

Communication, Attraction, and Satisfaction

Though not as well documented as the fact of differences between schools in our several classifications, the question of "the show of things" could turn out to be just as important in further investigations. What we are asking about is the possible sources of satisfaction, or perception of task success, concerning the guidance program of the school. If faculties tend to be satisfied with visible activity while there is an absence of any objective evidence that goals are indeed being reached, things can go badly awry while no one notices.

In opening the question of the possible origins of the perception on the part of the school faculty as to success in the task of guidance, I shall turn to McGrath's (1962) statement that communication, attraction, and perception of task success tend to go together; that where one is high, the others tend to be high. There is suggestive evidence in our data that satisfaction (perception of task success) tended to be higher where counselor-student ratio was higher, that communication was higher, and that communication with another person about guidance and testing was positively related to respect for the competence of the other in these matters -- respect here being a form of attraction. Whatever the deficiencies of the several portions of the data, these results hung together as McGrath said they should if the communication-attraction-satisfaction complex of variables was operating in our sample schools. These results suggest that if an administrator or counselor should wish to claim success for his guidance program, he should ask himself whether he can produce unbiased and properly controlled evidence that this is the case, or whether, on the other hand, it is possible that his confidence in his efforts is being supported by his commitment to his efforts and by a communication-attraction-satisfaction cycle in the school. What is needed for a confident conclusion is an objective assessment with proper controls.

In speaking of the necessity for proper controls in drawing conclusions from empirical observations, I certainly do not suggest that the present study should be used as a model of studies of counseling effectiveness. The present study has all the weaknesses of correlational studies and of exploratory studies laid out with little theoretical thinking during the planning. Although our study has demonstrated that reasonable evidence can be found for the effectiveness of guidance as it is now being carried on in a large population of schools, no one concerned about the future of guidance work should take our results to mean that the question of effectiveness is settled. Much more careful and comprehensive research than this needs to be done, using more carefully constructed measures, covering more of the relevant domain, and including controls permitting inferences about causation.

The practices and attitudes we chose to examine are admittedly not systematically representative of the aspects or characteristics of schools and faculties which it is possible to examine. Furthermore, the differences we found among them are surely more often than not superficial and phenotypic rather than causal and genotypic. Subsequent studies should be more penetrating; they should make use of theory about group processes, information transmission, and role performance as a guide to planning. Some suggestions in this direction will be given in Chapter VI and elsewhere. Our findings strongly urge, however, that it is a worthwhile venture to seek differences between schools of high and low counselor-student ratios. The frequency with which we found differences when we looked for them and the sizes of many of the differences surely encourage the claim that further research is justified into the question of the underlying ways in which a school active in guidance differs from one less active. The question of what distinguishes a school which is effective from one which is less effective is a further question which is still begging for further investigation, but both questions are important. This study has not reached adequate answers to either question; but it has, I hope, given some useful suggestions for further research.

Policy and Research

(to be written)

CHAPTER II

THE PLAN OF THE STUDY

The original data for this study were gathered in the spring of 1959 as a part of a larger exploratory study (see Hastings, et al., 1960). The larger study was a reconnaissance over the area of the use of test results in schools. We were seeking variables which would help us to understand the ways in which the various uses of test results come about. Naturally, our inquiry touched upon the guidance and counseling services in the schools we studied. Since the project as a whole was exploratory and extensive, rather than precise and intensive, much of our data gathering was designed for "correlational" analysis; no part of the original study was "experimental" in the manipulatory sense and few parts had even the sophistication of a "before and after" design. The data used for the present report were gathered from a wide sample of Illinois schools by means of questionnaires, and for present purposes, may be looked upon as having been gathered at one point in time. This study is in essence, then, a "correlational" study, and care must be taken in making inferences from these data about what leads to what. For example, we found that students in schools with relatively fewer students per counselor were more often aware of the details of how standardized test results were conveyed to parents than were students in schools with relatively more students per counselor. Did the presence of relatively more counselors result in the students learning from them how test results got to their parents? Or were the schools which conveyed test results to parents in organized ways easily visible to students those schools which also, in general, hired relatively more counselors? Such questions will be raised at the appropriate points.

Selection of Schools and Subjects

Data were obtained from the public high schools in the state of Illinois enrolling 100 or more students, a total of 591 schools. This list of schools was taken from the current Illinois School Directory issued by the State of Illinois (1958). During the early spring of 1959, questionnaires had been developed and pretested by means of trials and interviews in nearby schools. Special questionnaire forms were developed for principals, teachers, and students; and a package of these questionnaires followed an alerting letter to each of the 591 schools in April of 1959.*

Every package of materials contained a questionnaire for the principal of the school. For schools enrolling fewer than 2500 students, questionnaires were enclosed for five teachers whose names had been selected randomly from the Illinois School Directory; fifteen teachers were selected in the larger schools. This procedure designated a total of 3500 teachers, or 20 percent of the approximately 17,675 teachers to be found in these schools.

A modified procedure was followed in sampling students. The schools in which students were to be sent questionnaires were selected from among those schools participating in the Illinois Statewide High School Testing Program. This was done in order to make available to the study the scores of the students on the battery of tests comprising the Program.

State of Illinois, Superintendent of Public Instruction, Department of Textbooks and Publications. Illinois School Directory, 1958-1959. (Circular Series A, No. 126) Springfield: author, 1958.

*Copies of the letters, questionnaires, and other materials can be found in the report on Cooperative Research Project No. 509 by Hastings, et al (1960).

(This was convenient since Dr. J. T. Hastings, the Chief Investigator of the research project, was also the Director of the office operating the Statewide Testing Program.) The Illinois Statewide High School Testing Program, operated by the Office of Educational Testing at the University of Illinois, offers to high schools in Illinois (on a voluntary basis) a battery of tests to measure academic aptitude, reading comprehension in the natural and social science, and writing skills. The tests are designed for the junior and senior year in high school, and almost every school in the Program administers the tests to every member of the junior class. Among the 591 high schools originally listed for the study, 386 or 65 percent were participants in the Statewide Testing Program. Scores on the tests of the Program were available in our office files for almost every junior student in these schools.

A fairly good appraisal of the way schools in the Statewide Testing Program (hereafter to be abbreviated SWTP) represent the public schools of the state can be made in terms of size of school. The pertinent figures for 1958-59 are given in Table II-1, which shows numbers and percentages of high schools in each size interval in the state as a whole and also in the SWTP. This table omits schools in Chicago since Chicago operates its own testing program. The table argues that the schools in the Program represented very well the schools in the state as a whole, at least in terms of size.

For the present study, schools among the original 591 which were participants in the SWTP and which had enrollments of 500 or more were listed, and 40 schools were selected randomly from this list as those to which questionnaires for students were to be sent. From the rosters of

Table II-1. **Distribution by Size of Public High Schools in Illinois, Excluding Chicago, Compared to the Distribution of Those Participating in the Illinois Statewide High School Testing Program, for 1958-59.**

	Schools in the state		Schools in SWTP		Percent SWTP schools in each enrollment interval (Col. 4 divided by Col. 2)
Enrollment	No.	Percent	No.	Percent	
1	2	3	4	5	6
0- 99	98	15	61	14	62
100-299	316	48	218	49	69
300-499	81	13	57	13	70
500-999	81	12	58	13	72
1000 or more	79	12	51	12	65
Total	655	100	445	100	68

juniors in these schools available in the SWTP office, a few students were marked off as not eligible for sampling because they had failed to complete one or more of the tests in the SWTP battery; from the remainder a random sample of 30 juniors was selected in each school. Questionnaires were enclosed for them in the school's package. A copy of the questionnaire used with students appears as Appendix II-A.

In the case of every individual person sampled, that person was named in the instructions accompanying each school's package of questionnaires. When completed questionnaires were received, the person's name was checked off to make sure the proper person had been reached. If named teachers were no longer with the school, the school was instructed to replace them with others whose names were next in alphabetical order. (The returns seemed to indicate that the schools sometimes followed this instruction and sometimes not, but substitutions were comparatively few.) In the case of students, no instructions were given to replace students no longer at the school; however, since the names of students were taken from a list of those in school during the previous semester, very few students were missing.

Rates of Questionnaire Returns

Although our rates of return did not come up to the astonishing 100 percent obtained by Rothney (1958), the rates of return would generally be called excellent. Table II-2 shows the rates of return for each respondent group. Column 2 in the table shows the number of schools and individuals originally listed, and Column 3 shows the percentages of these returning usable replies. Column 4 shows the reliability of the sampling of each respondent group, in terms of any given characteristic of a school

Table II-2: Questionnaire Returns.

Questionnaires sent to:	Number sent	Percent returned filled out	One-half width of 95% confidence interval where p = .5	Number reached	Percent returned from those reached
1	2	3	4	5	6
Schools	591	94	.01		
Principals	591	89	.02	556	94
Teachers	3500	78	.02 (a)	3286	83
Students	1190	92	.026 (b)	1160	94

(a) based on a population of approx. 17,675 teachers in high schools enrolling 100 or more.

(b) based on a population of approx. 55,000 juniors in high schools enrolling 500 or more.

(or of a respondent) the probability of which in the population would be .5. For example, given the probability of .5 of the characteristic occurring in the population, the proportion of schools (first line of table) having the given characteristic would have been estimated by the proportion found in our obtained sample with an accuracy of (plus or minus) one percent, and this estimate of accuracy can be made at the 95 percent level of confidence. Where the proportion in the population having the given characteristic (or giving a particular answer, etc.) is greater or less than .5, the accuracy of the estimate from the sample would be better; where the proportion might be estimated from some part or subdivision of the total sample, however, the accuracy of the estimate would go down. It must also be remembered, of course, that these figures on accuracy of estimate assume that the obtained samples were simple random samples of the respective populations; and this was not strictly true. For one thing, a rough approximation to stratified sampling was used to select teachers and students; this should make the accuracies somewhat better than the figures shown in Table II-2. But then again, the returns obtained were not 100 percent of the original list; this may have biased the sample somewhat. This latter possibility will be discussed further in the next section.

The term "number reached" in the table indicates the number of respondents in those schools where the principal agreed to distribute the questionnaires. The principal in each school was sent a package of questionnaires and asked to have them distributed. If he did not do so, the teachers and students in that school had no opportunity to return their questionnaires. The information on "number reached" is not pertinent to adequacy of sampling but is included for its interest in regard to obtaining returns when using a two-stage "reaching" process. The percentages in

Column 6 of Table II-2 give the better indication of the willingness of the individual recipients of the questionnaires to return them; these "willingness" percentages are seen to have been substantially higher than the actually obtained percentages.

Representativeness of the Obtained Returns

Non-response. Since fewer than 100 percent of the listed respondents returned their questionnaires, the question arises as to bias in the sample. That is, would those who did not return their questionnaires have answered them in about the same way as those who did return them? One way to estimate the answers which might have been obtained from those who did not answer is to extrapolate from the answers of those respondents who answered only after some prodding. Principals who did not respond to our first communication were followed up with another letter, a telephone call, and yet another letter, as necessary. Teachers were followed up with two letters and students by means of a letter sent to the principal and naming the delinquents. Students required very little following up; when the principal distributed the questionnaires, almost every student in every school filled out his questionnaire the same day, sealed it, and put it in the mail in the school office.

We examined the distributions of the answers given to the questionnaire items by teachers requiring no follow-up in comparison with the answers given by those requiring one or more follow-ups. Among 43 items* on the questionnaire only three showed a significant difference (beyond the .05 level) between the teachers who responded at once and those who required following up. This proportion seems not far from happenstance. It seems not unreasonable to suppose that those teachers who required more following up than our budget allowed would have answered much as those teachers did whom we did follow up, who in turn responded much like those requiring no follow up. This result provides some added confidence in the representativeness of our sample of teachers. Unfortunately, this test by extrapolation could not be applied to the sampling of students because too few required following up.

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*The questionnaire for teachers is reproduced in Appendix II-B. The straightforward background items on the cover page were omitted from the analysis.

Michelman's sample. The best way to check the reliability of a sample is to compare it with another sample drawn independently. Fortunately, an independent sample was available. Data collected by Michelman (1960) will be discussed in the next chapter in connection with school enrollments, number of counselors, and the availability of counseling man-hours. His results, it will be seen, corroborate ours very nicely.

The 1960 check-sample. In addition to Michelman's sample, independent data were also available from a sample drawn in 1960. Comparison with the 1960 check-sample left the original sample unscathed. Because of the complexity of the analysis of the 1960 comparison, space will not be given to it here; the 1960 sample and its analysis are given in Appendix II-C.

Validity of the Data

We have given evidence for the "goodness" of the data used in this study. The sampling taken in 1959 of public high schools in Illinois with enrollments of 100 or more, and of their personnel, seems to have been reasonably close to random, adequately representative, and of good accuracy.

This much evidence, of course, does not tell us whether the subjects' responses to the questionnaires will tell us anything of interest. We shall find this out when we look at the relations among the responses to the various items of the questionnaires. At the same time we shall find evidence that the questionnaires were carefully answered. Repeatedly, in later chapters, the relations found among the data will "make sense." That is, if individual questionnaire items were reliably answered, we shall expect to be able to specify certain items which will show relations in specifiable directions with other items, and certain items which will show specifiable relations with characteristics of respondents assessed by other means than questionnaire. I am referring here not to the relations one might hypothesize concerning the central question about counseling effectiveness; previous studies give us little confidence in deciding what kind of findings about counseling effectiveness will "make sense." We refer rather to relations which we can take to be unquestionably obvious and which would therefore provide a check on the reliability with which the questionnaire items were answered and a check on the validity of the data. An example would be the expectation of a positive relation between the proportion of students reporting that they had at some time visited a counselor and the counselor-student ratio in the school. This relation was indeed strong and positive in our data, and many others having such validating character will be found on subsequent pages.

Reliability coefficients of the sort which can be computed for multiple-item tests will not figure in this report. With the major exception of certain of the Differential Aptitude Tests (Bennett, Seashore, and Wesman, 1947), which will be brought into the narrative in Chapter III, Bennett, George K.; Seashore, Harold G.; and Wesman, Alexander G. Differential Aptitude Tests. New York: Psychological Corporation, 1947.

multiple-item questioning measures were rarely used, nor were multiple-observation measures of other sorts. Nevertheless, the internal evidences of reliability in the data are many; and a very large proportion of the relations predicted within the data turned out to be significantly non-random, as will be seen in subsequent chapters.

In fact, the indications of the "goodness" of the data are the justification for this report. As was mentioned at the beginning of this chapter, the study was not originally designed as a careful test of the hypothesis that guidance counseling in high schools has certain particular effects upon students. Rather, the study was designed as a broad exploration of the conditions and attitudes in schools which might be related to the manner in which tests (particularly standardized tests) were used in the schools. Depth and precision, accordingly, were sacrificed for breadth. Money and the time asked of respondents were used to obtain what we hoped would be adequately reliable data on a wide variety of potentially useful variables. So many of the data turned out to behave according to common-sense expectation, however, that we felt justified in using them to test some hypotheses, not highly precise but at least specific enough so that the results would be useful to educators and social scientists. This report is the result of this confidence in the data and comprises a series of tests of hypotheses concerning the effects (or correlates, to speak more precisely) of existing guidance services.

Finally, it should be mentioned for ethical reasons that two reports of results were sent to all participants who had requested them (a labeled space for such a request was provided at the end of each questionnaire) and to all principals regardless of whether they had requested reports. Partial reports have also appeared in the Newsletter of the Illinois Statewide High School Testing Program.

CHAPTER III

THE EFFECTIVE FACTORS: THE PRESENCE OF COUNSELORS, VISITS TO THEM, GENERAL ACADEMIC APTITUDE, ETC.

Our central question concerns the effects of putting counselors into high schools and especially the effects on the choices, knowledge, or attitudes of students -- although we shall take occasion later on to discuss some concommitant beliefs and attitudes of teachers. The kinds of effects on students which we shall discuss in later chapters will include the appropriateness of the educational and occupational choices made by the student, his knowledge of how much education is required for entry into the occupation, and his knowledge of the abilities and skills needed for that type of work. For the space of the present chapter, however, we shall postpone discussion of these and other kinds of effects and confine our attention to some ways of characterizing the guidance services of the school and to some of the conditions which might help or hinder the guidance counselor. In other words, we shall present in this chapter the chief predictor variables of our study: those characteristics or conditions which might be expected to be effective factors in bringing about desirable choices and knowledge on the part of students.

We shall also consider a few variables which seem hardly able by themselves to produce effects such as choosing an occupation well-suited to one's abilities but which might control the extent to which another variable, such as talking with the counselor, could have an effect. An example of such a control variable would be general intellectual ability. No matter how "smart" one may be, he cannot choose an occupation wisely unless he somehow gets information about available occupations. However, verbal intelligence may help to make a conference with the counselor about these matters much more effective, thus "controlling" the effects of talking with the counselor. This example also serves to illustrate the fact that control variables sometimes convert themselves to independent variables. We shall find in a number of cases that, although visiting the counselor is related to the appropriateness of students' choices of occupation, intellectual ability is related also and sometimes even more strongly. In fact, it will be seen that sometimes the relation between visiting the counselor and making appropriate occupational choices vanishes entirely when we "control" for differences in intellectual ability. In brief, our results will, in a number of instances, imply that appropriateness of occupational choice is better explained by intellectual ability than by whether the student had visited the counselor. In choosing their occupations, no doubt students of higher intellectual ability profit to a greater degree than do students of lower ability from the many sources of information about occupations other than the school counselor.

The Chief Predictor Variables

We are seeking to test whether guidance counselors now working in schools are having effects on students -- effects which are reasonably within the realm of what most counselors try to achieve and which most concerned persons would agree to be desirable. After selecting certain effects as criteria, such as certain kinds of choices and knowledge on the part of students, one way to study this central question would be to find a group of students who had not previously had counseling available, assess the degree to which their choices and knowledge met the criteria, subject them to counseling for a reasonable period, and then again measure the students on the criterion variables to see whether an improvement had occurred. Another method of studying the question would be that used by Rothney (1958). One would find two groups of students who had not had counseling and who had experienced similar previous influences. One would then counsel one group but not the other and see whether the counseled students afterward exceeded the uncounseled on the criterion measures. A third method would be to find a large number of students, some of whom had been counseled and some not (and some counseled more than others) and who represented a variety of schools, communities, and previous experiences. One would then determine whether those students who had been more often counseled were higher on the criterion measures than those who had been counseled less often or not at all. This third method is the method of this study.

Actually, although it was convenient to speak in the previous paragraph in terms of the frequency of counseling individual students, this kind of variable does not reflect the interest of our primary question. Although we shall in fact take up at a later point the question whether students who actually receive some minimal amount of counseling respond with choices and knowledge closer to our criteria, our first concern is whether the brute fact of having counselors in the school has a noticeable effect in the mass. That is, do students in schools where there are counselors (or relatively more counselors) stand higher on our criterion variables than students in schools where there are no counselors (or relatively fewer)? Our first independent variable, then, will be the ratio of counselors to students in the school.

Counselor-Student Ratio

Each principal's questionnaire asked, "How many students are in your school?" and "How many counselors do you have? (Count only persons who devote 50% or more of their time to guidance.)" From the answers to these two questions, the ratio of counselors to students was computed for each school in which we sampled students. We could then test whether students responded differently on our criterion measures in schools where relatively more counselors were available compared to schools in which there were relatively fewer; such tests will be reported in later chapters. Table III-1 below shows how the counselor-student ratios were distributed among the 38 schools in the sample from which student questionnaires were received, as well as the reciprocal; that is, the number of students per counselor.

Table III-1 exhibits a considerable range in the portion of a counselor's time which could be claimed by a student in a given school. Furthermore, the upper third of the schools showed counselor-student ratios which are well within generally recommended ratios. The distribution of counselor-student ratios, in brief, was wide enough to provide good tests of relations between this variable and the criterion variables.

Accuracy of the measure. The question can be raised, however, whether our obtained counselor-student ratios reflected in a reasonably accurate way the amount of guidance service available to students in the school. Many schools, it is known, apportion guidance duties part-time among a number of personnel. The fact that our measure lumped together everyone who was assigned guidance duties at least half time and ignored everyone with a lighter assignment might have distorted the faithfulness with which our ratio mirrored the guidance service available to the student.

Table III-1. Enrollment, Number of Counselors, Counselors per Student, and Students per Counselor in the Schools in Which Students Were Sampled.

School No.	Enrollment	No. of counselors	Counselors per student	Students per counselor
1	1510	12	.0079	126
2	1254	7	.0056	179
3	1500	8	.0053	188
4	1150	6	.0052	192
5	900	4	.0044	225
6	1196	5	.0042	239
7	1703	7	.0041	243
8	742	3	.0040	247
9	1485	6	.0040	248
10	1750	7	.0040	250
11	2000	7	.0035	286
12	575	2	.0035	288
13	3400	11	.0032	309
14	620	2	.0032	310
15	1300	4	.0031	325
16	650	2	.0031	325
17	1350	4	.0030	338
18	750	2	.0027	375
19	3460	9	.0026	384
20	1160	3	.0026	387
21	2200	5	.0023	440
22	989	2	.0020	495
23	1030	2	.0019	515
24	566	1	.0018	566
25	590	1	.0017	590
26	602	1	.0017	602
27	620	1	.0016	620
28	1275	2	.0016	638
29	675	1	.0015	675
30	1547	2	.0013	774
31	872	1	.0011	872
32	975	1	.0010	975
33	1139	1	.0009	1139
34	1265	1	.0008	1265
35	1296	1	.0008	1296
36	1300	1	.0008	1300
37	753	0	0	----
38	670	0	0	----

That the assignment of portions of time to guidance duties varied widely in Illinois in 1958-59 is attested by Michelman (1960). In 395 public high schools in Illinois assigning at least five hours per week of someone's time to guidance duties, the following were the frequencies of persons having various portions of their time assigned to guidance (this tabulation includes counselors and deans but not administrators):

5 to 14 hours per week	427 persons
15 to 29 hours per week	309
30 or more hours per week	387
Total	1123

A good way to assess the accuracy with which our counselor-student ratios distributed the schools would be to compare our data with other data collected independently and preferably data which also sought to index the availability of guidance service to the student. Fortunately, further data of Michelman's (1960) were sufficiently close to ours in intent and sample so that a meaningful comparison could be made. Michelman's data were collected under the auspices of the Superintendent of Public Instruction of the state of Illinois, and the next sub-section will be devoted to comparing Michelman's data with ours.

Agreement between Michelman's data and the present study. In comparing our data with Michelman's, we shall not confine ourselves to the 38 schools from which data on students were received but shall utilize the 510 schools in which the principals replied to our questions about the enrollment of the school and the number of counselors. The distribution of enrollment against number of counselors in these schools is shown in Table III-2.

Michelman (1960) also gives information for the year 1958-59 on the number of counselors in schools lying within each enrollment bracket.

Table III-2. Number of Schools in the Present Study in Which Principals Reported Indicated Enrollments and Number of Counselors.

		Enrollment											
Line	Number of Counselors	0 -99	100 -199	200 -299	300 -399	400 -499	500 -599	600 -699	700 -899	900 -1499	1500 -1999	2000 -5499	Total Schools
1	12-22										1	4	5
2	7-11									6	3	12	21
3	5- 6								1	7	3	9	20
4	4				1		1		1	8	7	7	25
5	3			1				1	3	8	4	3	20
6	2			2	2	1	7	7	4	11	1	1	36
7	1	2	38	21	17	14	13	16	10	9	1	1	142
8	0	6	132	48	28	9	8	4	4	1	1		241
	Total schools	8	170	72	48	24	29	28	23	50	21	37	510
9	Mean enrollment	87*	150	250	350	450	550	650	780	1170	1710	2930	640
10	Counselors/school x 100	*	22	39	52	67	107	118	161	346	448	708	145
11	Counselors/student x 1000	*	1.5	1.6	1.5	1.5	1.9	1.8	2.1	3.0	2.6	2.4	2.3
12	Students/counselor	*	670	643	672	674	515	552	485	338	382	414	442

*Although only those schools shown in the Illinois School Directory to have enrollments of 100 or more were included in the sampling list, principals of eight schools reported enrollments of fewer than 100. Ratios in lines 10-12 are not given for these schools because the sampling in this enrollment interval was accidental and biased. In the remaining enrollment intervals, all mean enrollments were computed from grouped data and are approximate.

Michelman obtained data from 631 schools out of an original list of 690. Michelman's list included all four-year public high schools in Illinois; it did not omit schools of enrollments under 100, as did ours. It should also be remembered that Michelman included as a counselor anyone who was assigned guidance duties for at least five hours per week. Michelman's distribution of counselors among enrollment brackets is given in Table III-3.

The data of Tables III-2 and III-3 are compared in Figure III-1, where the mean number of counselors in each enrollment bracket is plotted against the mean enrollment in that bracket. It will be noted that the curve for Michelman's data lies generally higher than the curve for ours; this is to be expected since Michelman's cutting point on number of hours assigned to guidance admitted more persons into his sample as "counselors." The greatest difference is in the enrollment bracket of 700-899, where Michelman's data show 1.03 more counselors per school than do our data; the other differences average 0.21 counselor. Considering the different definitions of "counselor" used, these two curves show very close agreement in almost all enrollment brackets. But beyond this, the important feature of the curves in Figure III-1 is the remarkable similarity of their trends. This fact is important because our primary question is not whether a certain number of counselors have some certain effect on students but rather whether relatively more counselors have relatively more effect compared to relatively fewer counselors. In this regard, the two curves arrange the schools in the various enrollment brackets almost identically.

The data of Tables III-2 and III-3 also enable us to compare ratios of students to counselors; this is done in Figure III-2. Here the curve for Michelman's data lies, of course, generally lower than the curve for our data. The differences in the lower enrollment brackets are larger

Table III-3. Number of Schools Reported by Michelman as Having in 1958-59 the Indicated Enrollments and Number of Counselors. (Condensed and additional ratios computed from Michelman, 1960, Table III A. "Counselors" in the table below include only those designated by Michelman's table as counselors, guidance directors, deans, or advisors.)

		Enrollment											
Line		0 -99	100 -199	200 -299	300 -399	400 -499	500 -599	600 -699	700 -899	900 -1499	1500 -1999	2000 -over	Total
1	Number of schools*	88	203	68	51	28	22	25	22	49	24	51	631
2	Mean enrollment	71	150	248	345	441	550	650	782	1169	1719	3000**	603***
3	Counselors/school x 100	3	12	35	69	75	150	160	264	363	475	757	145
4	Counselors/student x 1000	.5	.8	1.4	2.0	1.7	2.7	2.5	3.4	3.1	2.8	2.5	2.4
5	Students/counselor	2082	1269	703	503	588	367	406	297	322	362	396	415

* Numbers of schools in each enrollment bracket were obtained from Michelman's Table V.

** Estimated.

*** This mean enrollment figure for all schools is smaller than the mean of 640 for all schools shown in Table III-2. At least part of the difference is due to the intentional difference in regard to schools with enrollments under 100. The mean of 603 is probably a better estimate of the mean enrollment of all public high schools in Illinois while the mean of 640 is probably a better estimate of the mean of all schools with enrollments of 100 or more.

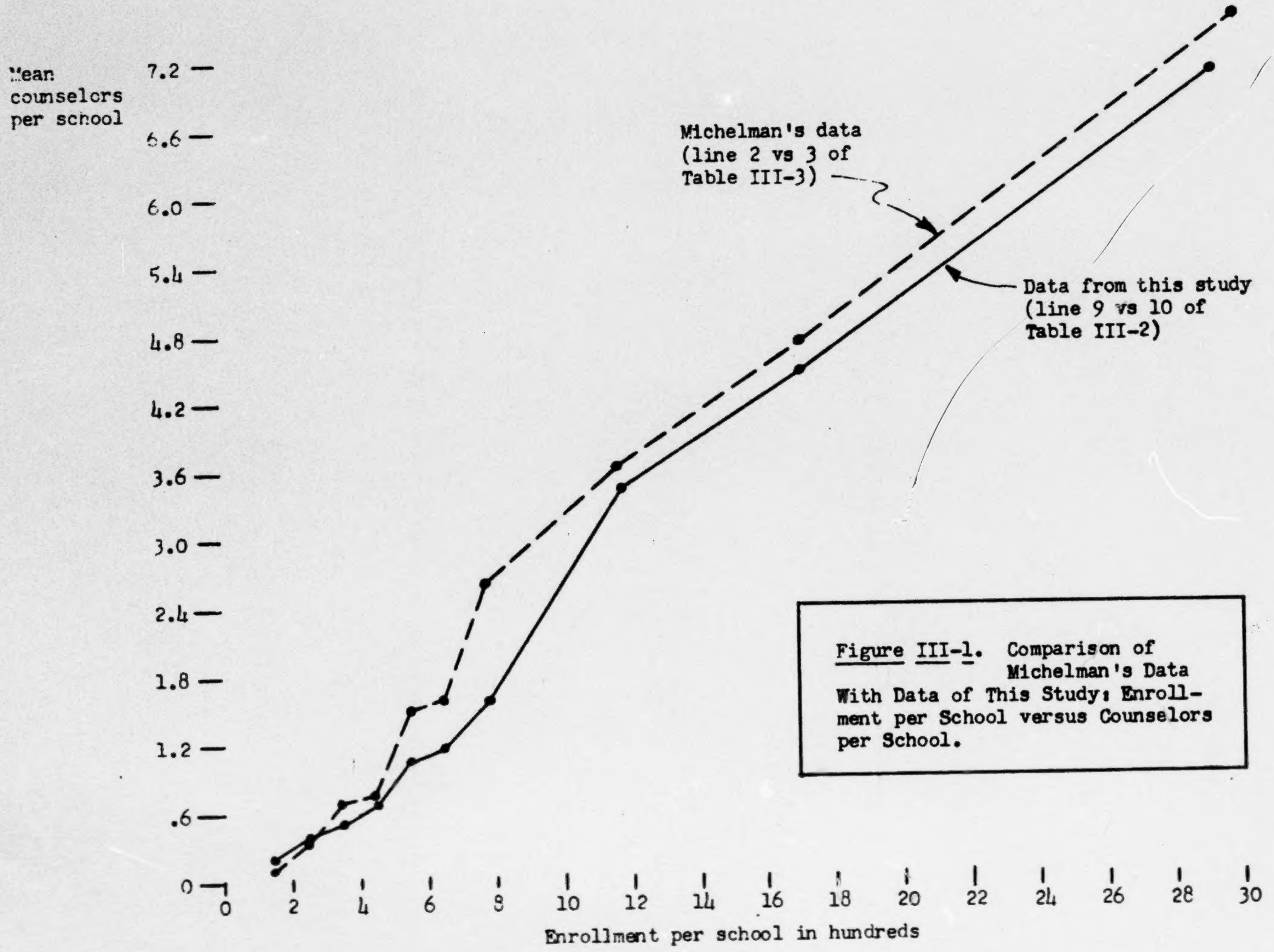


Figure III-1. Comparison of Michelman's Data With Data of This Study: Enrollment per School versus Counselors per School.

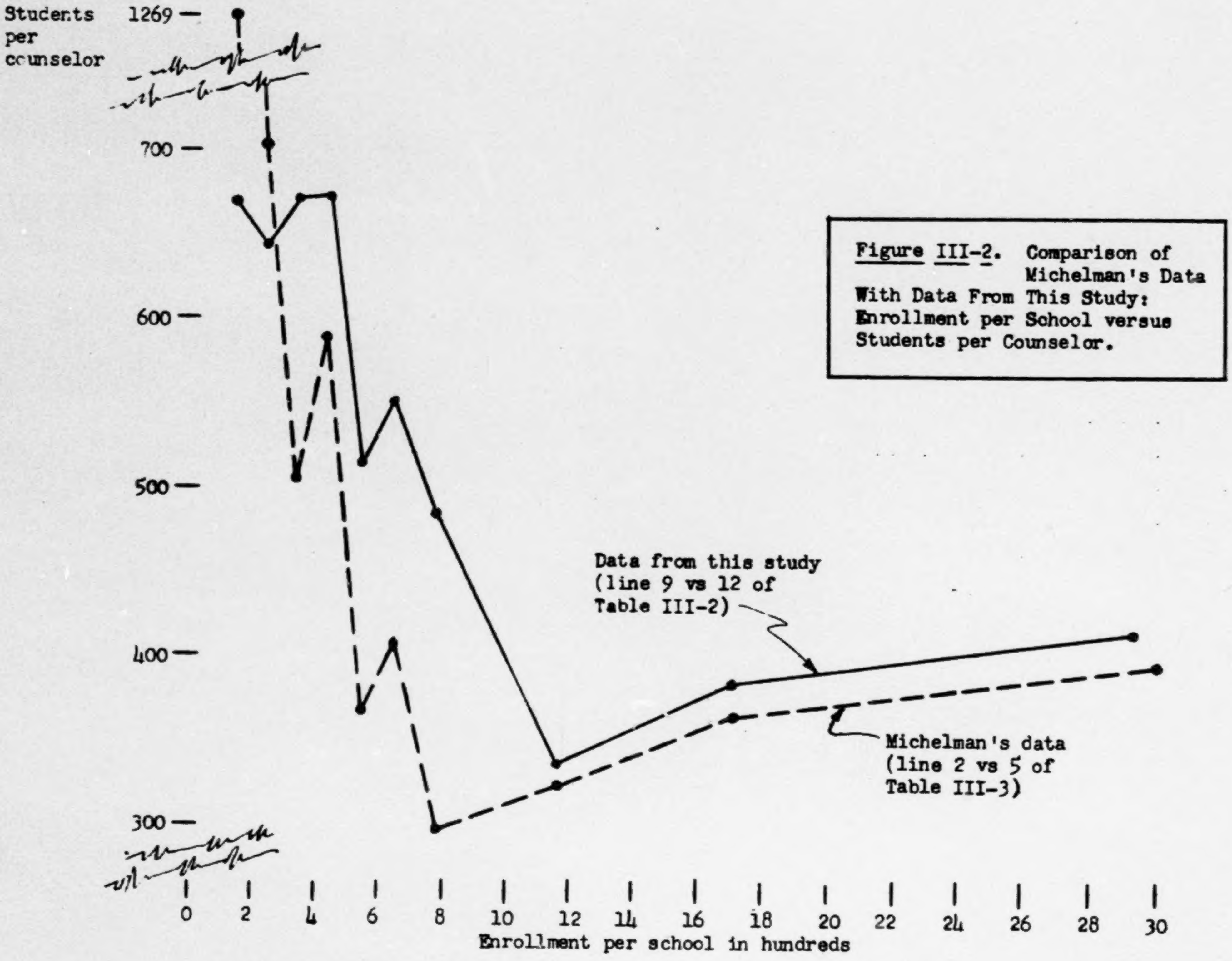


Figure III-2. Comparison of Michelman's Data With Data From This Study: Enrollment per School versus Students per Counselor.

than those in the higher enrollment brackets; no doubt the effect of more persons being included as counselors in Michelman's data is exaggerated in the lower enrollment brackets by the fact that the numbers of counselors per school are very small, even fractional. In Figure III-2, as in the preceding figure, the trends of the two curves are very similar.

Michelman gave further information which brings us closer to the idea of the availability of guidance service. In a separate question to his respondents, he asked how many man-hours per week were devoted (by anybody) to guidance duties. These data, again by enrollment bracket, are shown in Table III-4. These data can be compared with our own in two ways. First, Michelman's data on number of hours devoted to guidance in the school can be combined with the data in Tables III-2 and III-3 on number of counselors in the school to give a rough estimate (one estimate from Michelman's figures on counselors and another from ours) of the number of hours per week the mean counselor in each enrollment bracket devoted to guidance. To be reasonable, obviously, the number of hours should turn out to be markedly less than a full work week since the typical counselor is assigned some duties other than guidance and since some hours are devoted to guidance in many schools not only by counselors but also by administrators for whom other duties are primary.

Table III-5 shows the estimated hours per week devoted to guidance by the average counselor in each enrollment bracket. Column 5 of the table shows the estimates based on Michelman's count of counselors, and column 6 shows the estimates using our own data on counselors. All estimates seem reasonable except those for enrollments below 200 in column 5. It appears that our figures on counselors agreed better with Michelman's figures on hours devoted to guidance than did his own count of counselors.

Table III-4. Number of Schools Reported by Michelman as Having in 1958-59 the Indicated Enrollments and Devoting the Indicated Man-Hours per Week to Guidance. (Condensed and additional ratios computed from Michelman, 1960, Table V.)

		Enrollment											
Row	Man-hours per week devoted to guidance	0 -99	100 -199	200 -299	300 -399	400 -499	500 -599	600 -699	700 -899	900 -1499	1500 -1999	2000 -over	Total schools
1	250-over										1	13	14
2	150-249									3	6	20	29
3	90-149								2	15	12	15	44
4	60- 89			1			2	5	4	19	2		32
5	40- 59		3	1	4	1	5	8	6	6	1		35
6	30- 39		2	4	5	6	4	1	4	4	1	2	33
7	20- 29	2	6	1	9	5	4	7	3	1	1	1	40
8	15- 19	1	13	6	3	2	2	2	2	1			32
9	10- 14	10	27	9	5	4	2						57
10	5- 9	11	43	12	7	4	2						79
11	0- 4	64	109	34	18	6	1	2	1	1			236
	Total schools	88	203	68	51	28	22	25	22	49	24	51	631
12	Mean enrollment	71	150	248	345	441	550	650	782	1169	1719	3000	603
13	Mean man-hours per week per school	4	7	9	15	18	32	38	47	84	133	178	36
14	Mean man-hours per week per school per student x 100	6.3	4.6	3.8	4.4	4.0	5.8	5.9	6.0	7.2	7.7	5.9	6.0

Table III-5. **Mean Man-Hours per Week Devoted to Guidance in Schools of Indicated Enrollments, Estimated From Michelman's Data and From the Data of the Present Study.**

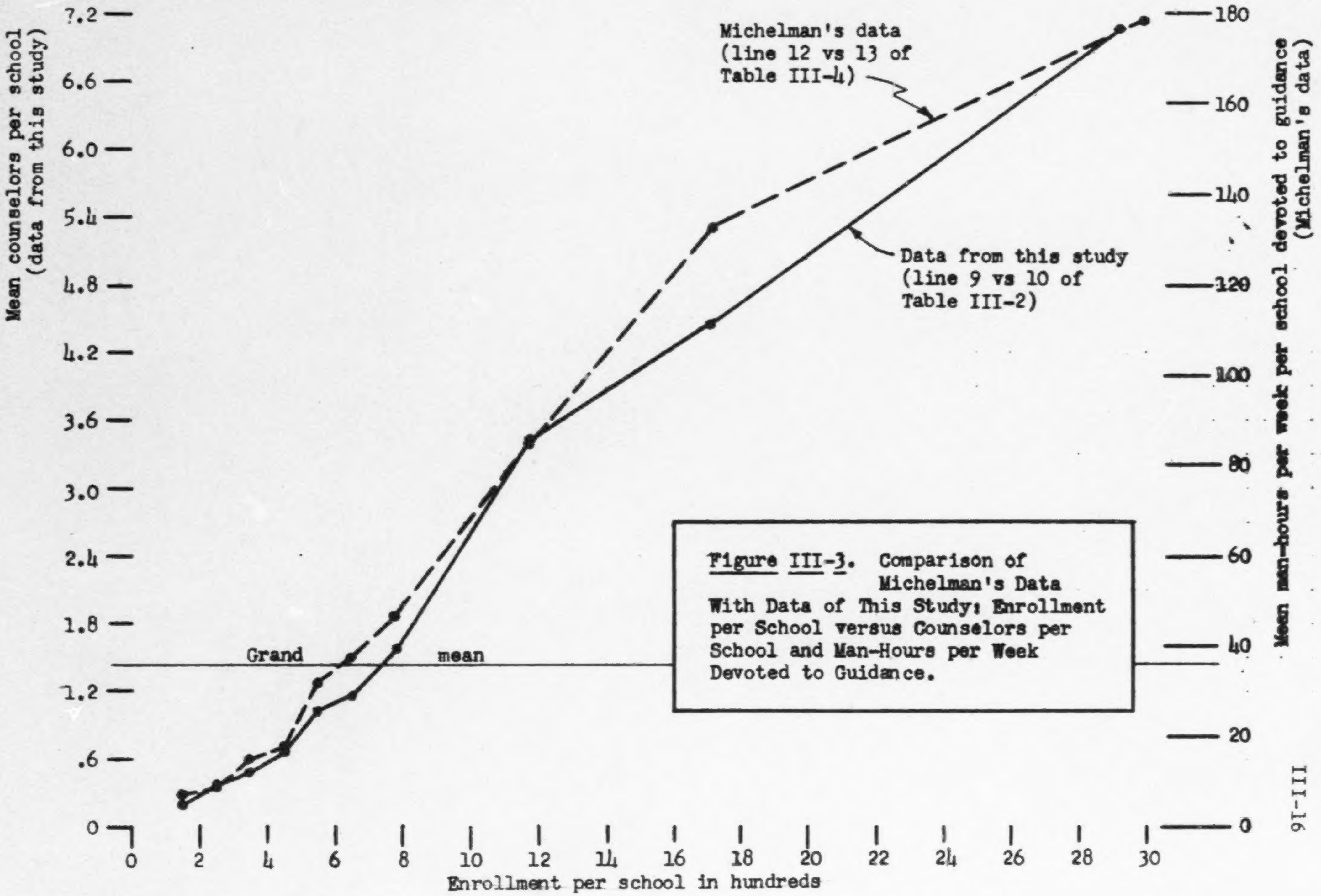
Enrollment	Mean man-hours per week per school (a)	Mean counselors per school		Mean hours per week per counselor	
		Michelman's data (b)	This study (c)	Michelman's data (d)	This study (e)
1	2	3	4	5	6
2000-over	178.33	7.569	7.081	23.6	25.2
1500-1999	132.58	4.750	4.476	27.9	29.6
900-1499	83.55	3.633	3.460	23.0	24.1
700- 899	47.23	2.636	1.609	17.9	29.4
600- 699	38.40	1.600	1.179	24.0	32.6
500- 599	31.77	1.500	1.069	21.2	29.7
400- 499	17.54	.750	.667	23.4	26.3
300- 399	15.24	.686	.521	22.2	29.3
200- 299	9.43	.353	.389	26.7	24.2
100- 199	6.95	.118	.224	58.9	31.0
0- 99	4.44	.034	.250	130.6	17.8
Total	36.09	1.452	1.448	24.9	24.9

(a) Michelman's data; same as line 13 of Table III-4 herein.
(b) Michelman's data; same as line 3 of Table III-3 herein.
(c) Our data; same as line 10 of Table III-2.
(d) Column 2 divided by Column 3.
(e) Column 2 divided by Column 4.

Another way to use Michelman's data on hours devoted to guidance is to compare them, as a measure of the availability of guidance, with our own figures on number of counselors per school, as an approximate measure of the same thing. What we shall look for in this comparison is similarity of trend across enrollment brackets. Figure III-3 plots our data on number of counselors per school and Michelman's data on hours devoted to guidance per week per school, both against enrollment. The two curves were superimposed by laying out the vertical scales so that the zero points would coincide and also the means for all enrollments pooled (these means are found at the right-hand ends of line 10 of Table III-2 and line 13 of Table III-4). The resulting plots show impressively similar curves both as to trend and as to elevation.

Finally, we can compare hours devoted to guidance per week per student (Michelman's data) with students per counselor (our data). This was done by computing the mean and standard deviation of the figures on students per counselor in line 12 of Table III-2 and the same statistics for the figures on hours per student in line 14 of Table III-4. Scales for the graph were then chosen so that the two standard deviations would be equal on the paper, and the two means were placed at the same level. The resulting plot is that of Figure III-4. Here again, the trends of the two curves are very similar.

In summary, the comparison of our data on counselors and counselor-student ratios with the independently collected data of Michelman argues strongly that the schools in our sample are accurately ordered in terms of the availability of counseling. Not only is there very close replication of trend from one enrollment bracket to another, but even the levels of counselor-availability are in close agreement in



Michelman's data
(line 12 vs 13 of
Table III-4)

Data from this study
(line 9 vs 10 of
Table III-2)

Figure III-3. Comparison of Michelman's Data With Data of This Study: Enrollment per School versus Counselors per School and Man-Hours per Week Devoted to Guidance.

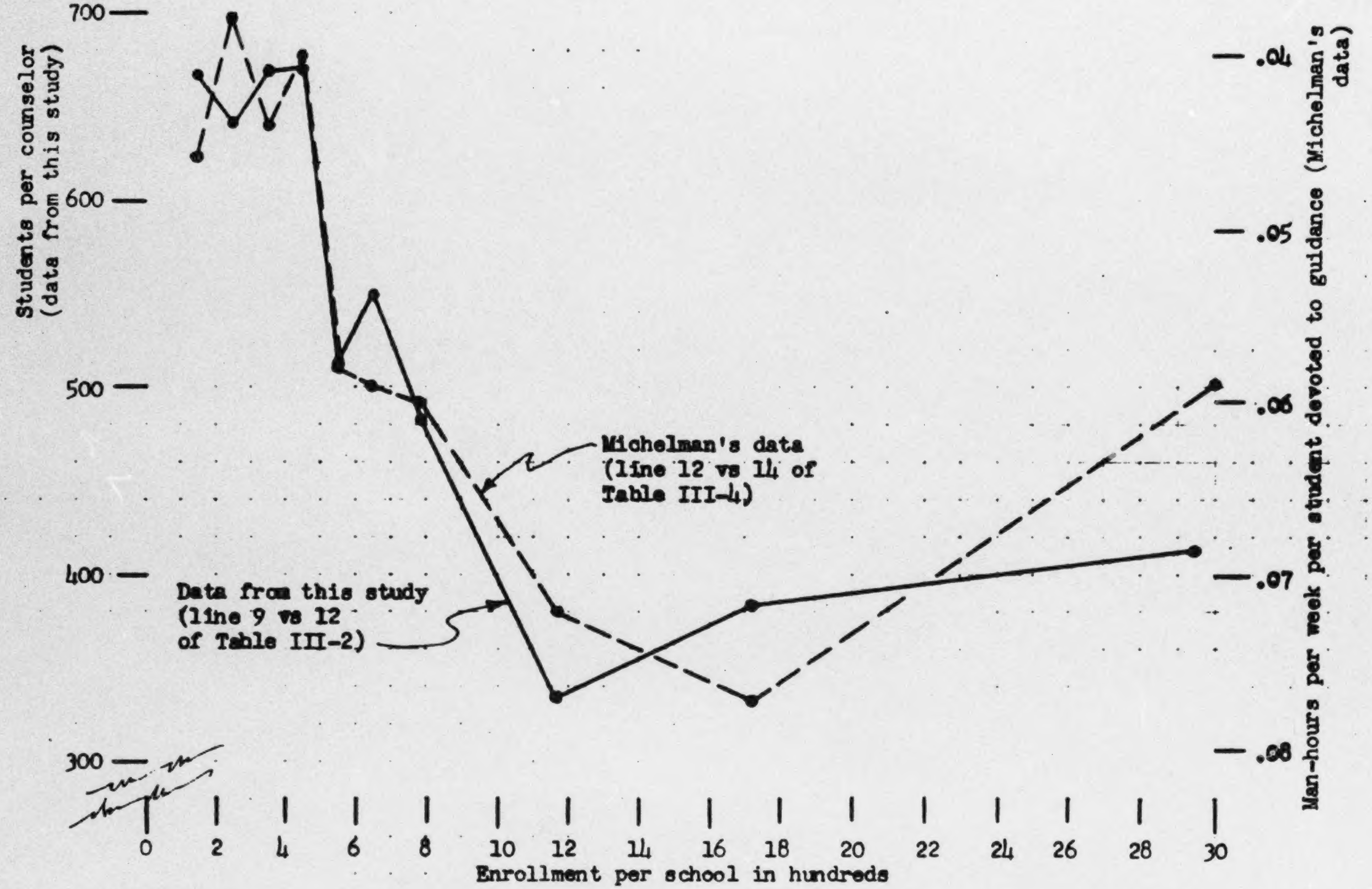


Figure III-4. Comparison of Michelman's Data With Data of This Study: Enrollment per School versus Students per Counselor and Man-Hours per Week per Student Devoted to Guidance.

most parts of the range, particularly when the somewhat differing definitions of "counselor" are taken into account.

Counselor-student ratio and size of school. In passing, we may note that Figures III-2 and III-4, taken together, estimate the most favorable ratio of counselors (or counselor-hours) to students to have been found predominately in those schools having enrollments between about 700 and about 1800, while the very small schools were offering the least amount of counselor-availability per student.

The fact that the smallest schools tend to have the smallest counselor-student ratios while the larger schools have larger ratios can be seen in a two-way frequency distribution, crossing enrollment with counselor-student ratio. Table III-6(a) shows the distribution of the schools which gave us the necessary information, with each of the variables divided into three categories. Clearly, there was a roughly positive association between the two characteristics.*

Table III-6(b) shows the distribution of the 38 schools in which students were sampled. The categories of enrollment and counselor-student

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*In all tabulations in this report, underlined frequencies or percentages will indicate cells which contain larger numbers than would be expected from the marginal totals; these are the "over-represented" cells. For example, we see in Table III-6(a) that 78 percent of the schools having enrollments of 17 to 199 had counselor-student ratios of zero to .00167; but among all schools regardless of enrollment only 56 percent of schools had those counselor-students ratios; thus the schools with ratios of zero to .00167 were "over-represented" among schools with enrollments of 17 to 199 -- they had more than their share, so to speak.

The value for P gives the probability that the over-representation seen in the table could have occurred purely by chance, without any reliable tendency existing for smaller schools to have smaller counselor-student ratios or larger schools larger ratios. Whenever the value of P is .05 or less (as in this table where the value is less that .01) we shall reject the possibility that the over-representation in some cells of the table was due only to chance, concluding instead that there was in fact a reliable association between the one variable and the other.

Table III-6. Schools With Indicated Counselor-Student Ratios in Indicated Enrollment Ranges, and the Distribution of Students in Them.

(a) Percentages of Schools in the Entire Sample.

Enrollment of school	Counselor-student ratio Zero to .00167	.00168 to .00322	.00323 to .00794	Total	School N
600-5499	37	40	23	100	159
200- 599	54	26	20	100	173
17- 199	78	0*	22	100	178
	56	22	22	100	510

* The lack of cases here is no doubt due to the artifact that adding one counselor in a small school causes a large jump in the counselor-student ratio. Because of this restriction, chi-square was computed ignoring this cell and using 3 degrees of freedom. Chi-square = 13.67, $P < .01$. Underlined percentages are larger than would be expected from the marginal totals.

(b) Number of Schools in Which Students Were Sampled Falling in Various Categories of Enrollment and Counselor-Student Ratio.

Enrollment of school	Counselor-student ratio Zero to .00167	.00168 to .00322	.00323 to .00794	School N
1300-3460	2	4	7	13
900-1299	5	3	4	12
566- 899	6	5	2	13
	13	12	13	38

(c) Percentages of Students in the Sample Falling in Schools of Various Categories of School Enrollment and Counselor-Student Ratio.

Enrollment of school	Counselor-student ratio Zero to .00167	.00168 to .00322	.00323 to .00794	Total	Student N
1300-3460	15	30	55	100	384
900-1299	40	25	35	100	337
566- 899	47	37	16	100	366
	34	31	35	100	1087

ratio were chosen so that the number of schools falling in the three categories in either variable would be as nearly equal as possible. Even though the enrollment categories are not the same here as in Table 6(a), this table reflects very faithfully the association between the two characteristics already seen in the previous sub-table. Table 6(c) shows the distribution of students in the schools laid out in Table 6(b). The same pattern of heavy cells, of course, occurs again because the same number of students was sought in each school and the percentage of returns was high.

Leaving these characterizations of the variable of counselor-student ratio, we now turn to our second important predictor variable.

Visiting the Counselor

Ignoring the risk of seeming repetitious, let us state once more that our emphasis in this study is on the ways things are presently being done; we ask whether we can find some of the correlations we would expect to find if putting guidance counselors into existing schools under existing conditions has some of the effects on students we would hope for. With this orientation, our first predictor variable selected was sheer supply of counseling man-power, measured by the counselor-student ratio computed as described above. Surely such a variable has an immediate interest for agencies which can have a direct influence upon the supply of counselors to schools but only indirect effects on how such man-power is actually used in the schools. Such agencies would include federal and state legislators considering financial aid for training guidance workers, policy officers of state departments of public education, experts concerned with making recommendations about staffing, and the like.

The next question, however, is obvious. Does the counseling man-power in the school actually impinge upon the student? Surely, in two schools with the same counselor-student ratio, more of the counselors' hours may be spent in actual conferences with students in one school than in the other. If guidance counselors are effective at all, we should certainly expect students who had visited counselors to fall differently on our criterion variables from those students who had not visited counselors. It will be useful, consequently, to separate these two groups of students. If counselor-student ratio of the school turns out to show little relation to a criterion variable, there still may be a relation between the criterion variable and visiting the counselor. Such a finding would be interesting to local administrators as well as to counselor trainers and experts on policy. If such a finding were indeed to occur, the course of action would be obvious: free more of the counselor's hours for direct contacts with students.

Our method of ascertaining those students who had had direct communication with a counselor was very simple. Item 19 of the students' questionnaire (Appendix II-B) asked two questions: "Does your school have a guidance counselor or dean especially given the job of talking with students about their plans and problems?" and "If yes, have you ever gone to this counselor to talk over your plans and problems?" Students who answered "yes" to the second question were coded as having visited a counselor. Students who answered "no" to the second question or who omitted it because of having answered "no" to the first were coded as not having visited a counselor. Our measure of direct communication with the counselor, in other words, will have only two categories: yes and no. The distribution of schools in the sample according to the percentage of sampled students who reported that they had visited a counselor is shown in Table III-7.

Visiting the counselor and other variables. To put more meaning on our measure of visiting the counselor and to have a few indications of

__Table__ __III-7__. Distribution of Schools in Which the Indicated Percentage of Students Reported Having Visited a Counselor.

Percent of students visiting counselor	Number of Schools
87 - 96	3
77 - 86	4
67 - 76	7
57 - 66	8
47 - 56	3
37 - 46	7
26 - 36	6
Total	38

Median 63%

its validity, let us look at some relations between visiting the counselor and certain other variables. The first question which might arise is whether students were able to report accurately. Did they know they had visited a counselor when they had done so? To investigate this question, it was easy to compare the student's report of whether the school had a counselor with the principal's report. More exactly, one would expect relatively more students to be aware that the school had a counselor in those schools which indeed (we must trust the principals' reports) had relatively more counselors. And certainly one would expect the smallest proportion of students claiming a counselor to occur in schools where the principals reported no counselors. Table III-8 shows that those expectations were borne out.

The 78 percent of students in schools* which had no counselors (according to the principals) who nevertheless said there were counselors in their schools might at first stick in one's craw. However, this need not be a mystery. There is first the fact that we had instructed the principal to say "none" if he had only counselors assigned less than half time. Furthermore, some students no doubt interpreted the words "counselor...given the job of talking with students" as referring to an adviser, a home room teacher, or a teacher with some similar assignment. Finally, the proportions of students claiming actually to have visited the counselor conform much more closely to counselor-student ratios, as we shall see below.

Whether or not a student believed his school had a counselor, we should certainly expect students to be less successful in gaining an interview with a counselor in schools with relatively few counselors, and

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*There were two of these schools, each with about the same proportion of students answering "yes."

Table III-8. **Percentages of Students in Schools Having Indicated Counselor-Student Ratios Who Gave Indicated Answers to the Question, "Does Your School Have a Guidance Counselor or Dean Especially Given the Job of Talking With Students About Their Plans and Problems?"**

Counselor-student ratio	Answer to title question				
	Yes	Uncertain	No	Total	N
.00323 - .00794	95	3	2	100	386
.00168 - .00322	97	2	1	100	336
.00080 - .00167	89	6	5	100	308
Zero (no couns.)	78	9	13	100	55
	93	4	3	100	1085

In a table collapsed to 2 x 2 with yes answers and other answers crossed with no-counselor schools and other schools, chi-square is 17.19 with 1 df and $P < .001$. Taking only no-counselor schools and schools of .00080 to .00167 ratios, chi-square (1 df) is 3.97 and $P < .05$.

we should expect the proportion reporting they had done so to be least in the no-counselor schools (defined as above). Figure III-5 is a plot of the 38 sample schools, with percent of students in the school visiting the counselor plotted against counselor-student ratio. It can be seen that one of the two no-counselor schools was the lowest of the entire array in percent visiting, and the other no-counselor school was very close to it. The corners test (Mood, 1950) applied to Figure III-5 gave a random probability less than .01. Throwing schools into four brackets by counselor-student ratio and pooling students within each bracket, we have another view of this same information in Table III-9, where, of course, we see the same trend as in Figure III-5.

Mood, A. McF. Introduction to the Theory of Statistics. New York: McGraw-Hill, 1950, pp. 410-414.

We also examined the relation of visiting the counselor with school size, with the man-hours spent by the teachers in the school seeking information about students, and with a few other variables. None of these were significant.

The obvious next step in developing a measure of the type of experience of counseling received by students would be to include an assessment of the training of the counselor in respect to guidance duties. Another obvious step would be to examine and categorize actual types of practices occurring in counselor-student encounters. Unfortunately, our exploratory study stopped short of these important further steps. Nevertheless, we do not feel that the importance of our results is seriously weakened by being confined to the rude variables of counselor-student ratio and visiting the counselor. In an assessment of the practical results of the guidance enterprise, surely some measure of the outcomes of the

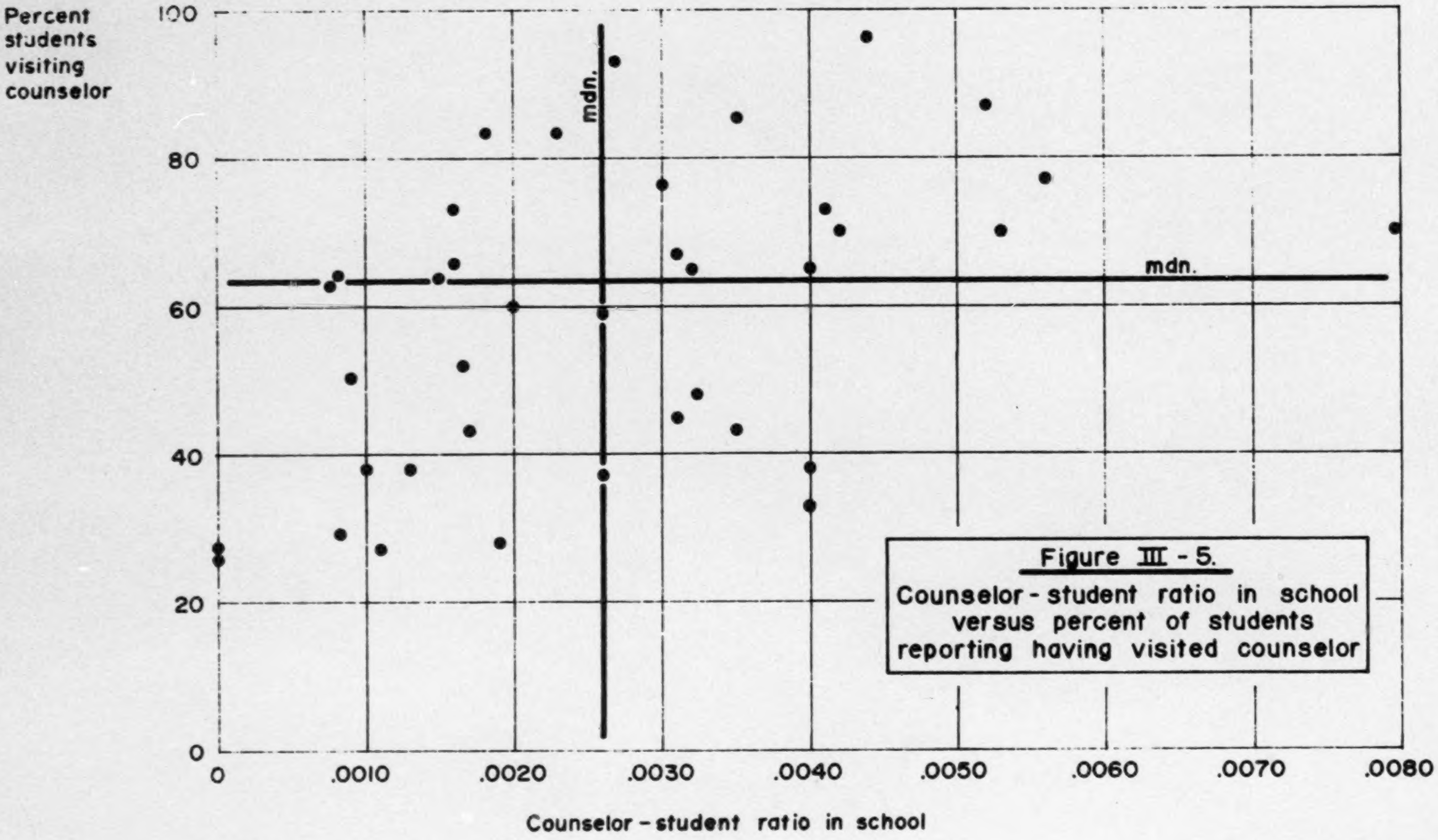

Figure III - 5.
Counselor - student ratio in school versus percent of students reporting having visited counselor

Table III-9. Percentages of Students in Schools Having Indicated Counselor-Student Ratios Who Reported Having Visited a Counselor.

Counselor-student ratio	Percent reporting visiting	N for 100 %
.00323 - .00794	65	386
.00168 - .00322	62	336
.00080 - .00167	52	308
Zero (no couns.)	28	57
	58	1087

Chi-square pooling the two lowest ratio brackets (2 df) is 13.50 and $P < .002$.

over-all effort is an important first step -- even an essential one -- before looking into finer detail.

The Chief Control Variables

Academic Aptitude

When investigating knowledge acquired by students, it always goes without saying that those students of higher academic ability will, on the average, acquire more knowledge, or acquire it faster, than those of lower ability. This is surely as true of students' acquisition of knowledge about their preferred occupations, of knowledge about their scores on standardized test scores, and the like as it is true of other matters. Since we have set out to seek relations between the presence and availability of counselors in the school, on the one hand, and knowledge of occupations, appropriate choices of occupations, and the like, on the other hand, we must beware that we do not attribute a relation to the presence of counselors when it can just as well be attributed to superior academic ability -- that is, to superior ability at information-getting on the part of the students themselves. If students in a school having relatively more counselors turn out to have more knowledge about their preferred occupations than students in a school with relatively fewer counselors while, at the same time, the students in both schools are of about the same information-getting ability, then such a result would be especially persuasive. To avoid the pitfall of attributing to counselors what might as easily be attributed to the intelligence of the students, all of the relations between counseling availability and knowledge on the part of students will be tested with academic ability taken into account; that is, the tests will be "controlled on academic ability," as we say.

The measure of academic aptitude (or "intelligence" if you will) which we used was that available from the Illinois Statewide High School Testing Program: the combined or "Total" score from the Verbal Reasoning and Abstract Reasoning sub-tests of the _Differential Aptitude Tests_ by Bennett, Seashore, and Wesman (1947). The items in these two sub-tests are all of the analogy type, being geometric in the Abstract Test and verbal in the Verbal Test. The "Total" score is obtained by counting all items in the two tests as if they belonged to a single test. This score will hereafter be abbreviated to DAT Total score and sometimes merely DAT.

The third edition of the DAT manual* displays a great many correlations between Verbal Reasoning, Abstract Reasoning, and various validating variables. To help put meaning on the Total DAT score made from these sub-tests, some of the correlations from the manual are excerpted in Table III-10. Descriptions of the subjects producing the correlations, as well as many other correlations, can be found in the manual. The last part of Table III-10 shows some data developed by the office of the Illinois Statewide High School Testing Program. In general, the DAT Total can be taken as one of the more reliable indices of facility with symbols, ability to solve problems when working with intellectual materials, and ability to pursue successfully tasks having strong intellectual components in company with people having at least some minimum education (this latter, somewhat elphantine clause refers to tasks such as getting good grades from instructors in college and obtaining a degree).

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*Bennett, Seashore, and Wesman (1959).

Bennett, George K.; Seashore, Harold G.; and Wesman, Alexander G. _Differential Aptitude Tests: Manual._ (3rd Ed.) New York: Psychological Corp., 1959.

Table III-10. Relations of the DAT Verbal Reasoning and Abstract Reasoning Sub-Tests With Other Variables. (Excerpted from Bennett, Seashore, and Wesman, 1959. All figures with decimal points are correlations.)

	Verbal Reasoning		Abstract Reasoning	
	Male	Female	Male	Female
Median correlations with high school grades in certain subjects:				
English	.49	.52	.32	.40
Mathematics	.33	.45	.32	.38
Science	.54	.55	.42	.45
Social studies and history	.48	.52	.32	.38
Correlations with selected intelligence tests:				
ACE Psychological: Linguistic	.74	.84	.46	.60
Quantitative	.66	.68	.58	.66
Primary Mental Abilities:				
Verbal	.49	.59	.44	.42
Reasoning	.41	.49	.60	.47
General Aptitude Test Battery				
G: Intelligence	.78	.72	.68	.57
V: Verbal aptitude	.72	.68	.48	.30
Percentile equivalents of high school students tested in 1947 who attained indicated advanced education by 1955:				
Advanced degree	86	--	76	--
College graduate	79	84	73	78
Some college	61	70	60	68
No further education	34	42	36	43

	Correlations with DAT Total	
	Male	Female
College Entrance Examination Board, Schol. Apt. Test - Verbal	.70	.72
College Entrance Examination Board, Schol. Apt. Test - Math.	.82	.86
Average high school grade over 4 years of senior in college preparatory programs	.73	.64
Wechsler Adult Intelligence Scale, full scale I.Q. of inmates in 3 federal reformatories	.74 to .79, males only	

Table III-10 (continued).

Expetancy table for Illinois juniors administered the DAT Verbal and Abstract sub-tests in 1957-58 and attending one of three Illinois state universities: percentages of students in indicated percentile intervals on DAT Total who obtained indicated grade point averages during their freshman year in college. (Data from files of Office of Educational Testing, University of Illinois. Percentiles are based on all juniors in the Statewide Testing Program in 1957-58, not merely on those who went on to college.)

Percentile on DAT Total	Grade point average (5 corresponds to grade of "A" and 1 to failure)								
	1.0 - 1.9	2.0 - 2.4	2.5 - 2.9	3.0 - 3.4	3.5 - 3.9	4.0 - 4.4	4.5 - 5.0	Total	N
90 - 99	2	4	13	19	22	23	17	100	142
80 - 89	2	2	22	26	34	11	3	100	125
70 - 79	2	4	27	26	33	7	1	100	70
60 - 69	2	12	27	25	27	5	2	100	56
50 - 59	4	16	21	34	21	4		100	56
40 - 49	11	14	30	32	11	2		100	44
20 - 39	8	20	21	29	17	5		100	65
0 - 19	24	31	14	24	7			100	29
	5	9	21	26	24	10	5	100	587

Some further information about DAT scores is given in Table III-11. The first two parts of the table give some normative information about the distribution of DAT Total scores among high school juniors in the state of Illinois for the year pertinent to the present study. Finally, Table III-11(c) shows the categories of DAT Total scores which will typically be used throughout this report. The entire sample of students was divided into thirds as equally as could be by DAT Total scores; the scores corresponding to the high, middle, and low groups on DAT are shown in Table III-11(c). The corresponding percentiles in Table III-11(c) show that the students in our sample averaged slightly higher than juniors throughout the state. This was to be expected, since students were not taken into the sample who had failed to complete one or more of the SWTP tests.

Academic aptitude and other variables. It is well known that average scores on academic aptitude tests tend to be higher in large schools* than in smaller, and we saw earlier in this chapter that the larger schools in our study tended to have higher counselor-student ratios than the smaller. Consequently, we should expect to find students with high DAT scores appearing relatively more often in the schools with the higher counselor-student ratios. Table III-12 shows that this was true. The table shows that while 35 percent of all students for whom the necessary data were available were in schools of the highest bracket of counselor-student ratios, the percentage was 44 among students high in DAT scores and only 25 among students low in DAT. It is obvious from this table that, when we find a relation between counselor-student ratio and some criterion variable

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*See, for example, Mohandessi and Runkel (1958).

Mohandessi, Khossrow, and Runkel, Philip J. Some socioeconomic correlates of academic aptitude. J. educ. Psychol., 1958, 49, 47-52.

Table III-11. Normative Information and Categories of DAT Total Scores Used.

(a) Distribution of DAT Total Scores of All Juniors in the Illinois Statewide High School Testing Program, 1958-59.

	Score
99th percentile	90
75th percentile	73
50th percentile	63
25th percentile	51
1st percentile	19

(b) Distribution of Mean DAT Total Scores of Juniors Among Public Schools in the Illinois Statewide High School Testing Program, 1958-59.

	Score
Highest school mean	80
Third quartile mean	63
Median mean	61
First quartile mean	58
Lowest school mean	41

(c) Categories of DAT Total Scores Used in This Report.

Label in this report	Raw Scores included	Percentiles based on statewide norms
High	71 - 95	71 - 99
Middle	57 - 70	37 - 69
Low	00 - 56	01 - 36

Table III-12. Percentages of Students in Indicated Academic Aptitude Intervals Who Were Enrolled in Schools Having Indicated Counselor-Student Ratios.

	Counselor-student ratio					
DAT	Zero	.00080 to .00167	.00168 to .00322	.00323 to .00794	Total	N
High	5	23	28	44	100	347
Middle	5	27	31	37	100	358
Low	6	36	33	25	100	358
	5	29	31	35	100	1063

Chi-square = 26.71, $P < .001$

in which we are interested, we must not claim that the presence of counselors was a probable cause (or even a possible cause) of the desired outcome before we take into account the relatively higher academic aptitude of the students in the schools of higher counselor-student ratios.

If DAT score is positively associated with counselor-student ratio, we should also look for a positive association between DAT score and visiting the counselor. Table III-13(a) shows the expected association. While 58 percent of the students on whom data were available for this table reported having visited a counselor, 63 percent of those high in DAT reported doing so but only 51 percent of those low in DAT. This is one of the relations in respect to which one regrets being limited to a correlational study. One quickly thinks of numerous ways in which such relation could come about. Did the high-DAT students more often visit the counselor because they were smart enough to see that it was a good idea? Did more of them visit the counselor because they were in schools where there were more counselors available per student? Did they do so because proportionately more of them were in the college-preparatory curriculum and therefore were sought out by the counselors? Some data which we shall present below will help us decide that some of these hypotheses are less likely than others, but the best explanation of a relation such as that in Table III-13(a) will rarely be easy to come by. Throughout this report, in fact, we shall be posing the relation in one table against the relation in another and grasping for an explanation which makes the best sense of both. The reader should not be surprised to find that he now and again does better at this game than the author.

Table III-13(a) displayed percentages of students who individually reported visiting a counselor. Table III-13(b) shows another aspect

Table III-13(a). Percentages of Students in Indicated Academic Aptitude Intervals Who Reported Having Visited a Counselor.

	Visited			
DAT	No	Yes	Total	N
High	37	63	100	347
Middle	39	61	100	358
Low	49	51	100	358
	42	58	100	1063

Chi-square = 10.20, P $<$.01

Table III-13(b). Percentages of Students in Indicated Academic Aptitude Intervals Who Were Enrolled in Schools in Which the Indicated Percentages of Students Reported Visiting a Counselor.

	Percentage in school visiting a counselor				
DAT	26-46	47-67	68-96	Total	N
High	31	27	42	100	340
Middle	30	33	37	100	354
Low	39	36	25	100	352
	33	32	35	100	1046

Chi-square = 25.72, P $<$.001

of the data. In Table III-13(b), percentages of students in each DAT level are shown who were enrolled in schools where a certain percentage (or range of percentages, more precisely) of students had reported visiting a counselor. As is not surprising, the relation in Table III-13(b) is similar to that in the previous table.

We have seen that visiting the counselor was associated with academic aptitude (i.e., DAT score). But was academic aptitude associated with knowing that the school had a counselor? (All but two of the principals of the schools providing our student sample reported having at least one counselor, and the other two schools may have had counselors assigned less than half time, as we mentioned before.) Table III-14 argues that DAT score had nothing to do with being aware that the school had a counselor.

There has been much said and written in recent years about guiding the academically talented into college-preparatory curricula and thence into college. Data were available in our study to tabulate the percentages of students in the various DAT levels who were enrolled in the various curricula. Transcripts of almost all of the sampled students were obtained from the schools, and two trained judges coded the courses recorded on the transcripts through the junior year as representing one of four categories:

College preparatory,
Commercial or business,
Vocational (agriculture, shop, industrial arts, home economics, etc.),
Mixed or uncertain.

Some transcripts bore a designation for the curriculum of the student and in such a case the judges took the school's word for it. The criteria used by the judges are given in Appendix III-A.

Table III-15 shows the percentages of high-DAT students and of other students who were enrolled in the various curricula. Although

Table III-14. **Percentages of Students in Indicated Academic Aptitude Intervals Who Gave Indicated Answers to the Question, "Does Your School Have a Guidance Counselor or Dean Espeically Given the Job of Talking With Students About Their Plans and Problems?"**

	Answer to title question				
DAT	No	Uncertain	Yes	Total	N
High	3	4	93	100	347
Middle	3	4	93	100	358
Low	3	4	93	100	358
	3	4	93	100	1063

Chi-square not significant

Table III-15. Percentages of Students In Indicated Academic Aptitude Intervals Who Were Enrolled in Indicated Curricula.

	Curriculum					
DAT	Mixed curr.	Voca-tional	Commerce	Coll. prep.	Total	N
High	21	8	8	63	100	302
Middle and low	41	22	13	24	100	615
	35	17	11	37	100	917

Chi-square = 127.22, $P < .001$

the students in a given curriculum were by no means limited to those from a certain DAT level, there was nevertheless a strong tendency, far beyond any reasonable chance occurrence, for the high-DAT students to be enrolled disproportionately more often in the college-preparatory curriculum and for students of the middle- and low-DAT levels to appear in the other curricula. Furthermore, this relation is not appreciably changed by looking only at students who had visited a counselor (we shall not take space to show these tabulations), only at students who had not done so, only at students in schools with high counselor-student ratios, or only at students in schools of middle or low counselor-student ratios. In every one of these categories, the relation between DAT level and curriculum had the same direction as in Table III-15, and in every case the chi-square was significant beyond .001.

If the presence of counselors were having any effect on the movement of students of high academic aptitude into the college-preparatory curriculum, we should not expect to have found that the relation between DAT level and curriculum were the same whatever the counselor-student ratio or whether or not the student had visited the counselor. But of course the significance level is not a good measure of relation, and the relations in the various categories mentioned above were of course not exactly equal. But to pursue this question would be to test one kind of criterion of the effectiveness of counselors, and such a topic belongs in the next chapter. There the matter will be pursued further.

As well as looking at the curricula in which students of differing academic ability were enrolled, we can also look at classes of occupation chosen by students of differing academic ability. Students were asked their first preferences among occupations; the resulting choices are divided into three categories in Table III-16 roughly according to the amount of training required to enter the occupation. (More detailed descriptions of the occupational responses will appear in Chapter IV.) Table III-16 shows, for students in each of three curriculum types, the relation between academic aptitude and occupational choice. It is clear that there was a pronounced tendency for students of higher academic ability to choose occupations requiring more training, and conversely. In sum, these two tables are evidence that students of high academic ability, in proportions well beyond chance, were enrolled in curricula and were choosing occupations which are generally considered to draw heavily upon academic ability. At the same time, the proportion of students in the upper third of the distribution of DAT scores who were enrolled in a college preparatory curriculum or who had chosen high-status occupations was well below 100 percent. Whether these results should be considered good news or bad news will be discussed later.

Finally, it should be mentioned that the topics discussed in this section overlap considerably with the studies of Youssef (1961), whose population was limited to Illinois, and of the Educational Testing Service (1957), whose population was nation-wide. The shape of the results of these two studies agrees closely with the results given in this section; as in the case of agreement with other studies we have mentioned, this is another argument for confidence in our results.

Youssef, Mohamed Ismail. Relation Between Academic Aptitude and Hoped-For Occupation among Public High School Juniors. Unpublished master's thesis, University of Illinois, 1961.

Educational Testing Service. Background Factors Relating to College Plans and College Enrollment among Public High School Students. Princeton, N.J.: author, 1957. (Mimeo.)

Table III-16. Percentages of Students in Indicated Academic Aptitude Intervals Who Gave Indicated First Occupational Choices, Shown Separately for Students Enrolled in Indicated Curricula.

A: Sales, secretary, clerk, equipment operator, skilled trades, unskilled, etc. (housewife omitted).

B: Professional and sub-professional other than below.

C: Scientist, engineer, pharmacist, physician, nurse, teacher.

Academic aptitude	First occupational choice A	B	C	Total	N	Chi-square	
	College preparatory curricula						
High DAT	11	29	60	100	190		
Middle DAT	29	26	45	100	101		
Low DAT	31	16	53	100	49		
	19	26	55	100	340	21.78	$P < .001$
	Commercial and vocational curricula						
High DAT	63	22	15	100	51		
Middle DAT	68	16	16	100	97		
Low DAT	80	10	10	100	113		
	73	14	13	100	261	7.76	$P < .11$
	Mixed curricula						
High DAT	27	23	50	100	64		
Middle DAT	56	15	29	100	114		
Low DAT	70	15	15	100	142		
	56	17	27	100	320	37.15	$P < .001$

Total chi-square = 66.69
12 df, $P < .001$

Hours Spent by Teachers in Seeking Information About Students

It seems reasonable to assert that guidance counselors do not easily carry on their work alone. Later in this report we shall discuss the possibility that the aid of the faculty is very important to the success of the counselor. At this point we mention the idea to explain the reason for using responses to a particular item as a control variable; namely, the item, "Apart from the actual time you spend in the classroom, about how often do you take time out to gather information about students?" (item 14, Appendix II-B). We hoped that teachers who reported frequent information-seeking would relatively more often be teachers who would be interested in the extra-classroom problems of students, would relatively more often talk to students about their abilities and prospects, and would more often consult with the counselor about these matters. Teachers who were active in seeking and using information about students, we reasoned, would serve as auxiliary channels for the work of the counselor. They would not only bring about increased contact between students and counselors; they would also cultivate the soil, so to speak. They would, whether intentionally or not, prepare the students for conference with the counselor, elucidate and supplement the counselor's communication, and clarify or reinforce his advice. Indeed, we shall see in Chapter IV that responses to this item became important in predicting the effectiveness of counselors.

The item was used to compute an index for each school of the amount of time spent by its faculty in seeking information about students. The index consisted of the mean response to the item by the teachers in the school and was computed by converting each answer into an estimated number of hours per semester spent in seeking information. The number of hours taken to represent each answer is shown below.

Answer chosen	Number of hours per semester taken as equivalent
Approximately one hour per semester	1
Approximately one hour per month	4
Approximately one hour per week	18
More than one hour per week	36

The mean of the equivalent number of hours corresponding to the teachers' answers was taken to characterize the school in regard to time spent seeking information about students. Table III-17 shows the number of schools among those in which students were sampled which showed various mean number of hours of information-seeking reported by teachers. The means for the schools were surely not highly reliable since each mean was composed from the responses of only five to fifteen teachers. Nevertheless, the rather remarkable range appearing in Table III-17 promised that the variable would be useful; and we shall see in the next chapter that it did indeed turn out to be so.

The relation between information-seeking by teachers and the counselor-student ratio in the school is shown in Table III-18, where it can be seen that there was a strong tendency for teachers in the schools of higher ratios to spend more time seeking information about students than those in schools of lower ratios. Of 13 schools having high counselor-student ratios, ten were above the median on information-seeking by teachers; but among the 13 schools with low ratios only four were above the median in information-seeking. This is an interesting result in itself since it might have been predicted that teachers would perceive the presence of relatively more counselors as an opportunity to relinquish to them some duties involving the gathering and use of extra-classroom information about

Table III-17. Number of Schools in Which Teachers Reported the Indicated Mean Number of Hours per Semester Spent in Gathering Information About Students.

Mean information-seeking in hours per semester	Number of schools
25.50 - 28.49	1
22.50 - 25.49	3
19.50 - 22.49	0
16.50 - 19.49	4
13.50 - 16.49	8
10.50 - 13.49	12
7.50 - 10.49	6
4.50 - 7.49	2
3.00 - 4.49	2
	38

Table III-18. Numbers and Percentages of Schools Having Indicated Counselor-Student Ratios in Which the Indicated Mean Number of Hours per Semester Were Spent by Teachers in Gathering Information About Students.

Counselor-student ratio	Mean hours per semester gathering information					
	3.00 - 12.99		13.00 - 28.49		Total	Total
	No.	%	No.	%	No.	%
.00323 - .00794	3	23	10	77	13	100
.00168 - .00322	7	58	5	42	12	100
Zero - .00167	9	69	4	31	13	100
	19	50	19	50	38	100

Chi-square = 6.03, $P < .05$

students. This point will be discussed in the chapter on teachers' responses to the presence of counselors.

The level of information-seeking by teachers in the school was also found to be related to whether students reported discussing standardized test results with teachers or counselors, as can be seen in Table III-19. This table divides the students according to the answer of the student to the question about talking with teachers or counselors about his test scores and shows the percentages within each of these groups who were enrolled in schools having various averages in regard to time spent by teachers seeking information about students. The relation is seen to be significantly positive, with 51 percent of the students who *frequently* discussed test results with teachers and counselors being found in the schools where the teachers were relatively more active in seeking information while only 39 percent of the students who answered *rarely* or *never* to the first question were found in those schools. It seems reasonable that the activities which produced the answers to these two questions overlapped somewhat. That is, the information-seeking activities of the teachers no doubt included some conferences with students during which the student's test scores were discussed. The relation shown in Table III-19 argues that the students' answers to the question about discussing test results were not determined entirely by their discussions only with counselors; apparently their discussions with their *teachers* also had an important effect on their responses.

Talking with Teachers and Counselors About Standardized Test Scores

We have just mentioned the item (Appendix II-A, item 20) which asked students, "When discussing your future plans with teachers or with a counselor, do they ever mention the scores you made on standardized tests?" and noted that answers to this item were found to be related to the mean

Table III-19. **Percentages of Students Giving Indicated Answers to the Question, "When Discussing Your Future Plans With Teachers or With a Counselor, Do They Ever Mention the Scores You Made on Standardized Tests?" Who Were Enrolled in Schools in Which Teachers Reported Spending the Indicated Average Number of Hours per Semester in Gathering Information About Students.**

Answer to title question by student	**Mean hours per semester spent by teachers in gathering information**			
	3.00 to 13.49	13.50 to 28.49	Total	N
Frequently	49	51	100	221
Sometimes	55	45	100	413
Rarely or never	61	39	100	380
	56	44	100	1014

Chi-square = 8.12, $P < .02$

hours devoted by teachers in the school to seeking information about students (Table III-19). Apparently, in answering the question concerning discussion of test scores, the students were not greatly affected by the availability of counselors (as distinguished from teachers) to whom to talk since we see in Table III-20 that responses to this question were not significantly related to counselor-student ratio. On the other hand, responses to this question were significantly related to actually having visited a counselor, as we see in Table III-21. In this table, we see that 27 percent of the students who had visited a counselor said teachers or counselors frequently discussed their standardized test scores with them while among those who had not visited a counselor only 13 percent gave that answer. The fact that answers to the question were related to visiting the counselor but not to counselor-student ratio is not startling since the relation between the latter two variables was far from perfect, as we saw in Figure III-5.

Does the result of Table III-21 mean that counselors typically discussed test scores with students who came to them, or does it mean that those students who asked their teachers and counselors about their test scores were also predominantly those who sought out their counselors? The table cannot help us with this kind of problem in interpretation; perhaps the data in later chapters, however, will offer some clues.

It may seem odd that a questionnaire item laying stress upon discussion of test scores, and including counselors along with teachers, was chosen to lay hold of support from the faculty for the work of the counselor. The reason is simple: the item was available. We mentioned in the introduction that the original research project was exploratory; the result is that some of the questionnaire items used in this report

Table III-20. Percentages of Students Giving Indicated Answers to the Question, "When Discussing Your Future Plans With Teachers or With a Counselor, Do They Ever Mention the Scores You Made on Standardized Tests?" Who Were Enrolled in Schools Having Indicated Counselor-Student Ratios.

Answer to title question	Counselor-student ratio: Zero to .00167	.00168 to .00322	.00323 to .00794	Total	N
Frequently	27	31	42	100	229
Sometimes	32	33	35	100	430
Rarely	39	30	31	100	193
Never	37	29	34	100	204
	33	31	36	100	1056

Chi-square = 9.90, not significant.

Table III-21. Percentages of Students Visiting and Not Visiting Counselor (in All Schools Pooled) Who Gave Indicated Answers to the Question, "When Discussing Your Future Plans with Teachers or with a Counselor, Do They Ever Mention the Scores You Made on Standardized Tests?"

Had visited counselor	Answer to title question: Never or rarely	Sometimes	Frequently	Total	N
Yes	30	43	27	100	628
No	50	37	13	100	425
	37	41	22	100	1053

Chi-square = 26.54, $P < .001$

are not as appropriate as they would have been had the study been designed for the purpose of this report at the outset. We have already had a hint, however, that students' answers to this item laid some weight on the activity of teachers since they were related to teachers' reports of their information-seeking activity. In fact, we shall see in the next two chapters that this item was indeed useful in predicting the effectiveness of counselors.

Summary

Since our central question concerns such effects of putting counselors into high schools as can presently be observed in randomly selected public schools, we must pay careful attention to the manner in which we characterize the presence and availability of counselors in the school. This chapter has described the two chief measures which were used to index the amount of counseling service in the school: (1) counselor-student ratio and (2) the student's report of whether he had visited a counselor.

Although our manner of computing counselor-student ratio rested on rather imprecise original measures, a comparison of the resulting ratios in schools of different sizes with data collected independently by Michelman (1960) showed very close agreement, reinforcing our confidence in the accuracy of the measure. Counselor-student ratio was found to be associated with size of school, the larger schools in general having the higher ratios of counselors to students (Table III-6) although the ratios in the very largest schools were somewhat lower than the ratios in schools having enrollments in the range from about 700 to about 1800 (Figure III-4).

The variable of whether the student had visited a counselor, measured by means of a simple questionnaire item asked of students, showed a very reasonable distribution when plotted against counselor-student ratio (Figure III-5); this was considered evidence for the validity of the measure.

Although our chief interest is in looking for relations between the two predictor variables (counselor-student ratio and visiting the counselor) on the one hand and criteria of counseling effectiveness on the other hand, it was pointed out that other important variables may go along with these two predictor variables; and our study would mislead us if a relation between, say, counselor-student ratio and appropriateness of occupational choice were actually covering up a relation between some third variable and appropriateness of occupational choice, particularly if the latter relation were a simpler explanation than the explanation involving the presence of counselors. Accordingly, the chapter described some control variables which will be used in subsequent chapters, the most obvious of these being general academic aptitude.

As we expected, the academic aptitude of the student was found to be positively related to the counselor-student ratio in the school (Table III-12) and also to whether the student had visited a counselor (Table III-13). It was not, however, related to whether the student was aware that the school had a counselor; 93 percent of students in all ranges of academic aptitude were aware that the school had a counselor (Table III-14). Another finding was that students high in academic aptitude were represented more than proportionately in the college-preparatory curriculum (Table III-15) and more than proportionally in choice of high-status occupations (Table III-16).

Another control variable described was the average number of hours spent by teachers in a school in seeking information about students. This variable, interestingly, was not significantly related to the proportion of students in the school who had visited a counselor but was related to counselor-student ratio (Table III-18). Apparently, where relatively more counselors are at work, more teachers are also at work at guidance activities. But since the efforts of teachers were seen not to be related to the proportion of students visiting a counselor, it may be that an effect of having more counselors is to stimulate teachers to accept a larger share of guidance duties. This point will come up again in the next chapter where relations will be investigated between the predictor variables and some criteria of the effectiveness of having counselors in the school, using the control variables further to illuminate the data.

The final control variable discussed in this chapter was the frequency with which the student reported discussing his scores on standardized tests with teachers or counselor. Frequency of discussion of test scores was not found to be related to counselor-student ratio in the school (Table III-20) but was significantly related to whether the student had visited the counselor (Table III-21) and to the mean hours devoted by teachers to information-seeking (Table III-19). This latter result was taken to imply that the question about discussing test results will prove useful as an index of support from the faculty for the counselor's guidance activities.

An obvious control variable not described in this chapter is that of sex. The sex of the student obviously affects his choice of occupation, his view of the advantages of the college-preparatory curriculum versus the commercial, and the like. Sex was taken into account in a number of analyses to be described later, and the use of the variable will be described at the appropriate points.

The next chapter begins the presentation of the findings connected with the chief criterion variables.

CHAPTER IV

EFFECTS ON STUDENTS: ABOUT THE CHOSEN OCCUPATION KNOWLEDGE

What kinds of criteria should one adopt in assessing the effectiveness of guidance activity? One's choice, of course, depends on one's purpose in studying the matter. Our purpose here is not to presume to say what functions the school ought to fill nor even, given some stated function for the school, to argue how guidance ought to contribute to that function. Our intent is to accept what body of opinion is discernible about the proper goals for guidance in secondary schools and then to present evidence on whether these goals are being reached.

Even a cursory survey of the literature shows fair agreement on guidance goals having to do with pointing students toward occupations and higher education, and agreement also that the student's knowledge about occupations and higher education should be increased. What seems a reasonably representative statement of the prevailing core of agreement on the goals of guidance is given by Wellman and Twiford (1961) in the form of questions about effects on students. Wellman and Twiford proffer these questions as important questions to be answered by assessments of the effectiveness of guidance counseling:

Wellman, Frank E., and Twiford, Don D. Guidance, Counseling, and Testing Program Evaluation: Suggestions for Secondary Schools. Washington, D.C.: U. S. Gov't Printing Office, 1961. Doc. No. OE-25020.

"1. Do students develop greater understanding of their abilities, aptitudes, and interests?

2. Are students, and their parents, fully aware of opportunities and requirements for education and careers?

3. Do students select courses, and achieve in them, in line with their abilities, aptitudes, interests, and opportunities?

4. Do those students who are able to do so finish secondary school?

5. Do those students who are capable of doing so continue education beyond the secondary school?

6. Are those students who continue their education beyond the secondary school successful in their educational pursuits?

7. Are significant numbers of the especially able students getting more extensive background in mathematics, science, and the foreign languages?" (p. 26)

Our own primary criterion measures, it will be seen, fit easily into the above outline. Related but secondary desiderata which we shall discuss in later chapters are also similar to some of the further suggestions of Wellman and Twiford; for example, making information about students easily available to teachers, discussing test results with students and with parents, and the like. The present chapter and the next, however, will confine itself to primary criteria.

Our primary criterion measures are (1) knowledge on the part of the student about how much education is required by the occupation of his choice, (2) knowledge of the abilities and skills needed in the occupation, (3) knowledge of specific activities a person in the occupation engages in, (4) proportion of students of high academic ability in the school who are to be found enrolled in the college-preparatory curriculum, (5) appropriateness of the student's curriculum to his chosen occupation, and (6) appropriateness of the student's choice of occupation to his abilities as delineated by the tests of the Illinois Statewide High School Testing Program. A section of this chapter or the next will be devoted to the findings in connection with each of these criterion measures.

Our primary hypothesis is that each of these criterion variables is positively related to each of our chief predictor variables: counselor-student ratio and visiting the counselor. However, as we have hinted earlier, what optimism we may have had for such an overly simple hypothesis was destined to be dashed. Therefore, some hypotheses somewhat more complex were developed in the attempt to wring some information of a positive nature from the data. This attempt was successful in certain instances where the new hypothesis included a variable reflecting support on the part of teachers for the work of the counselor. This outcome will be discussed at appropriate points in this chapter and the next, and Chapter VI will consider its implications.

Knowledge of the Education Required for One's Chosen Occupation

In the questionnaire for students, each student was asked to name his first occupational choice (App. II-A, item 10) and then he was asked, "How much education is required for this type of work?" (App. II-A, item 12*). The question was left open-ended, and the answer was coded into one of four categories. The labels to be used in this report for the four coded categories and the explanations of the categories are as follows:

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*This item, like a few others in the students' questionnaire, was borrowed with some modification from an interview schedule appearing in Gribbons (1959); we are indebted to him for these ideas and his kind permission to use his items.

Gribbons, Warren D. Determination of Progress in Educational and Vocational Planning in Adolescence. Cambridge, Mass.: Harvard Graduate School of Education, 1959. Unpub. doct. dissertation.

Exact: Answers coded here specified both a correct number of years and a correct place (e.g., college, high school, technical school, apprenticeship).*

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*Actually, to keep the task within the capacities of the coders, they were instructed not to code the accuracy of the answer but its precision or specificity. However, it was discovered in careful inspection that almost every answer which was specific was also accurate.

Place: Specified a correct place but the time period was only approximate (e.g., "three or four years," "some college").

Time: Specified an approximate time period but omitted place.

Vague: E.g., "lots," "some sort of night school." Answers of the "don't know" type are also included here.

This item, like all other open-ended items in the questionnaire, was coded independently by two coders. A tally of "errors" was kept for every coder. When two coders disagreed, the disagreement was argued out to the satisfaction of the coders and the supervisors, but for purposes of quality control an "error" was credited to the coder who lost the argument and also to the item. The percentage of errors (counted before the coding disagreement was resolved) varied among the items of the students' questionnaire from 0.2 percent to 4.6 percent of the responses coded, with a mean error rate per item of 1.9 percent.**

**For a fuller account of the coding process, see Appendix 3 of Hastings, et al. (1960).

Proceeding with this first criterion variable of the exactness of the student's knowledge about the educational requirements of his chosen occupation, let us examine the percentages of the various kinds of answers (listed above) which fell in the several categories of our two chief predictor variables. Taking first the predictor variable of counselor-student ratio in the school, we obtained the distribution shown in Table IV-1, which exhibits the percentages of the several types of answers concerning required education within each of three categories of counselor-student ratio. It is clear from Table IV-1 that the counselor-student ratio in the school made no difference worth mentioning in the accuracy of the student's description of the educational requirements of his chosen occupation. An analysis was also made in which the answers to the criterion question were divided only into two categories, "exact" and all others pooled, and this categorization was examined within counselor-student ratios. This gave no better result. A number of further analyses involving counselor-student ratio were also tried; these are listed in Appendix IV-A. In brief, the attempt to find a simple relation between counselor-student ratio and the criterion of knowledge about educational requirements was a failure.

Turning next to the predictor variable of visiting the counselor, we see a more encouraging result in Table IV-2, where a relation is shown which, though slight, is statistically significant. Fifty-two percent of students who had visited the counselor gave exact answers to the criterion question, compared to a base rate of 49 percent, while the percentages of students visiting the counselor who gave the other kinds of answers were less than their base rates. The magnitude of these differences is surely of small practical importance, but the fact that they were in the predicted direction and were statistically significant gave us some encouragement.

Our encouragement, however, was to be brief. When we tested the relation with academic aptitude held constant, the random probability of the result went above .05, which is the largest probability at which

Table IV-1. Percentages of Students in Schools Having Indicated Counselor-Student Ratios Who Gave Several Types of Answers to the Question, "How Much Education is Required for This Type of Work (student's first occupational choice)?"

Counselor-student ratio in school	Type of answer				Total	N
	Vague	Time	Place	Exact		
.00323 - .00794	15	10	26	49	100	374
.00168 - .00322	15	12	25	47	100	335
Zero - .00167	15	9	27	49	100	360
Total	15	10	26	49	100	1069

Table IV-2. Percentages of Students Among Those Who Had and Had Not Visited a Counselor Who Gave Several Types of Answers to the Question, "How Much Education is Required for This Type of Work?"

Visited counselor	Type of answer				Total	N
	Vague	Time	Place	Exact		
Yes	13	10	25	52	100	624
No	17	11	27	45	100	437
Total	15	10	26	49	100	1061

Chi-square with answers dichotomized into exact answers versus all other is 5.19, 1 df, $P < .03$. Underlined percentages are greater than would be expected from the marginal totals.

we shall allow ourselves to conclude that a relation between variables is dependable. The analysis performed within three levels of DAT score is shown in Table IV-3. Although the relation within middle-DAT scores is significant with a P-value less than .02, the total chi-square for the entire table yields of P-value which does not reach down to .05; this result is not strong enough to encourage confidence in the over-all relation between the predictor variable and the criterion.

Since it was conceivable that males and females might differ in the matters being analyzed here, analyses similar to that of Table IV-3 were performed separately for males and for females. The results remained non-significant.

It should be noted, more in passing than as a main point here, that a larger percentage (55 percent) of students with high DAT scores gave exact answers than did those with middle DAT scores (49 percent) or those with low DAT scores (45 percent). This relation between academic aptitude and knowledge of education required for the occupation is significant beyond the .05 level. However, such a result must be interpreted with caution, since the DAT Total score is in turn associated with other characteristics such as the type of curriculum in which the student is enrolled. For example, Table IV-4 exhibits the fact that DAT Total was no longer significantly associated with type of answer when the relation was controlled for the curriculum of the student. Further discussion of interrelations among academic aptitude, curriculum, and certain criterion variables will be found later in the chapter.

Academic aptitude was not the only variable which could account for part of the relation, originally seen in Table IV-2, between visiting the counselor and the description of the education required for entering the occupation. An analysis was also performed in which the variable held

Table IV-3. Percentages of Students Among Those Who Had and Had Not Visited a Counselor Who Gave Exact Answers to the Question, "How Much Education is Required for This Type of Work?" Shown Separately for Three Levels of Academic Aptitude.

	Type of answer to title question					
Visited counselor	Partial or vague	Exact	Total	N	Chi-square	
	High DAT					
Yes	42	58	100	196		
No	48	52	100	126		
	45	55	100	322	0.91	NS
	Middle DAT					
Yes	46	54	100	211		
No	60	40	100	131		
	51	49	100	342	5.42	P < .02
	Low DAT					
Yes	54	46	100	176		
No	56	44	100	148		
	55	45	100	324	0.07	NS
		3 df, total chi-square			6.40	P < .10

Table IV-4. Percentages of Students Within Indicated Levels of Academic Aptitude Who Gave Exact Answers to the Question, "How Much Education is Required for This Type of Work?" Shown Separately for Groups of Students Enrolled in Indicated Curricula.

	Type of answer to title question					
Academic aptitude	Partial or vague	Exact	Total	N	Chi-square	
	College preparatory curricula					
High DAT	44	56	100	188		
Middle DAT	45	55	100	100		
Low DAT	52	48	100	46		
	45	55	100	334*	0.98	NS
	Commercial curricula					
High DAT	58	42	100	24		
Middle DAT	55	45	100	44		
Low DAT	56	44	100	34		
	56	44	100	102*	0.26	NS
	Vocational curricula					
High DAT	65	35	100	26		
Middle DAT	42	58	100	52		
Low DAT	62	38	100	65		
	56	44	100	143*	6.01	$P < .05$
	Mixed curricula					
High DAT	45	55	100	64		
Middle DAT	62	38	100	107		
Low DAT	55	45	100	132		
	55	45	100	303*	4.15	NS
		8 df, total chi-square			11.40	NS

* N is reduced over previous tables chiefly because about 110 transcripts from which to judge curricula were not returned by the schools.

constant was not academic aptitude, as in Table IV-3, but instead the variable of talking with teachers or counselors about test results. Under this analysis the relation between knowledge of education required and visiting the counselor again fell below significance. Another analysis was performed holding constant the mean hours spent by teachers in the school in seeking information. In this analysis the significance level of the result failed to reach our standard of .05 though it did remain less than .10.

Up to this point, neither counselor-student ratio nor visiting the counselor succeeded in showing a relation with the criterion of knowledge about required education which could stand when academic aptitude or some other variable is taken into account. In other words, we have no evidence so far that the availability of counselors is any better an explanation for more exact knowledge about the chosen occupation than is the fact, for example, that some students are better at getting knowledge than others. This outcome is hardly surprising in view of the results of previous studies of counseling effectiveness.

Support from Faculty

It was mentioned earlier that we would be examining a subsidiary hypothesis; namely, that guidance counseling is more effective when it is accompanied by supplementary activity on the part of teachers. Much of the job of the counselor is certainly one of teaching; that is, of imparting knowledge about occupations and higher education, concepts about ability, and the like. Now, in contrast to the counselor, the classroom teacher typically exerts his knowledge-imparting efforts within the conditions given by a student-teacher ratio in the neighborhood of 25 or 30 to one, and nevertheless is sometimes disappointed in the results. The typical guidance counselor in an Illinois high school, on the other hand, must do his work under a student-counselor ratio in the neighborhood of 360 to one.*

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*Computing from our data in Table III-2, the mean student-counselor ratio in schools having at least one counselor was 361; the reciprocal counselor-student ratio was .00277.

It seems a reasonable deduction from these figures that almost any kind of aid the counselor might get from the faculty would increase his effectiveness. To this argument by arithmetic we can add the arguments of exposure and attention. In some schools, perhaps, the student's attention is drawn to planning for the future, matching his proclivities to his goals, and the like, only within the counselor's office, while in others he finds his teachers interested in these matters also. Surely, the latter student is more often in a condition to be influenced than the former. The argument here is much like the plaint often raised by teachers of grammar; how can their instruction be expected to "take" if other teachers do not support their efforts?

With this kind of rationale in mind, we chose two items from our questionnaires which we hoped would index supportive activity on the part of the faculty. One of these items was the question asked of teachers about the hours they spent outside the classroom in seeking information about students. And indeed, information-seeking by teachers predicted knowledge about required education at least as well as did the students' visiting the counselor. When the relation with information-seeking was tested, it was found to be significant beyond the .02 level. Furthermore, the relation remained significant beyond the .05 level when it was controlled for academic aptitude, as can be seen in Table IV-5. This table shows that although high-DAT students gave ten percent more exact answers

Table IV-5. Percentages of Students, in Schools Where Teachers Reported Spending the Indicated Mean Number of Hours per Semester in Gathering Information About Student, Who Gave Exact Answers to the Question, "How Much Education is Required for This Type of Work?" Shown Separately for Three Levels of Academic Aptitude.

Mean hours per semester spent by teachers in seeking info.	Type of answer to title question					
	Partial or vague	Exact	Total	N	Chi-square	
	High DAT					
13.50 - 28.49	45	55	100	162		
3.00 - 13.49	44	56	100	160		
	45	55	100	322	0.00	NS
	Middle DAT					
13.50 - 28.49	48	52	100	151		
3.00 - 13.49	53	46	100	191		
	51	49	100	342	0.76	NS
	Low DAT					
13.50 - 28.49	44	56	100	121		
3.00 - 13.49	62	38	100	203		
	55	45	100	324	9.00	P < .01
		3 df, total chi-square			9.76	P < .05

(55 percent compared to 45 percent) than did low-DAT students, nevertheless the percentage giving exact answers reached 56 percent among low-DAT students in schools where information-seeking by teachers was in the upper range. This percentage was as high as the average among the high-DAT students. The conclusion can be entertained that support for guidance activity from teachers can make up for intelligence on the part of the student, though the two factors combined (in our data, at any rate) did not increase the percentage of exact answers over the level of either factor separately. This pattern of results -- that a factor of supplementary faculty activity turns out to be effective among students low in academic aptitude -- will appear again later in the chapter.

We saw in Table IV-5 that the relation between information-seeking by teachers and exact answers to the criterion question by students remained significant when controlled for academic aptitude. This finding is not to remain firmly in our clutches, however, for it turned out that the relation between information-seeking and the students' answers about required education could be reduced below significance when controlled for visiting the counselor! The significance of the relation when controlled for whether the student visited the counselor no longer reached the .05 level, though it did remain on the hopeful side of the .10 level.

We now find ourselves in an interesting position; we now have a pattern of results in which the significant relation between a variable a and a variable b becomes non-significant when controlled on a third variable c, and the significant relation between c and b becomes non-significant when controlled on a. That is, the simple relation between (a) visiting the counselor and (b) giving exact answers about required education is significant ($P < .03$, Table IV-2) but becomes non-significant when controlled for (c) information-seeking by teachers ($P < .10$); and the simple relation between (c) information-seeking by teachers and (b) exact answers by students is significant ($P < .02$) but becomes non-significant when controlled for (a) visiting the counselor ($P < .10$). The obvious suggestion from this outcome is that while neither (a) visiting the counselor by students nor (c) information-seeking by teachers may have been sufficient when taken singly (and along with control on a third variable) to predict differences in percentages of (b) exact answers about required education, they might become sufficient if taken together. And indeed this expectation was confirmed by the results shown in Table IV-6. In this table we see that the combination of visiting the counselor and being in a school where teachers were more active in seeking information yielded a percentage of exact answers (57 percent) to the criterion item which somewhat exceeded the base rate (50 percent) and the combination of not visiting the counselor and being in a school containing less active teachers yielded a percentage of exact answers (42 percent) below the base rate.

The differences in Table IV-6 begin to approach practical importance. The table argues that visiting the counselor in a school where teachers provide supporting activity can increase by seven percent (more or less) the percentage of students having reasonably exact knowledge of the educational requirements for their chosen occupations; and conversely that not visiting the counselor in a school offering little support from teachers can reduce the number of students having reasonably exact knowledge by a similar percentage. Comparing the favorable set of conditions to the unfavorable, the difference in percentages of students with

Table IV-6. Percentages of Students in Categories of (a) Schools Where Teachers Spent Indicated Mean Hours Gathering Information About Students, Crossed with (b) Whether Student Had Visited a Counselor, Who Gave Exact Answers to the Question, "How Much Education is Required for This Type of Work?"

Visited counselor	Mean hours per semester spent by teachers in seeking info.	Type of answer to title question: Partial or vague	Type of answer to title question: Exact	Total	N
Yes	13.50 - 28.49	43	57	100	276
No	13.50 - 28.49	50	50	100	158
Yes	3.00 - 13.49	50	50	100	307
No	3.00 - 13.49	58	42	100	247
	Total	50	50	100	
	N	497	491		988

Chi-square when expected values are computed from marginal frequencies at right and bottom is 11.08, 3 df, $P < .02$. For method of computation see Mitra (1955, p. 64, formula for $H_{1.23}$).

Mitra, S. K. Contributions to the statistical analysis of categorical data. Univ. of North Carolina Mimeo. Series, 1955, No. 142.

exact knowledge was fifteen percent. If reasonably exact knowledge about the educational requirements of an occupation is prerequisite for the student to make efficient progress toward entering that occupation, then these figures seem large enough to justify some investment in bringing about the conditions of visiting the counselor and fostering supporting activity by teachers. It must be admitted, of course, that the causal direction is not proven by our data. It is conceivable, for example, that some students go to see the counselor because they are aware of the educational requirements of their chosen occupations; they might wish to discuss a choice of college. It is even conceivable that teachers become more active in seeking information about students in schools where students are well informed about the educational requirements of occupations; this latter seems especially unlikely, however, in view of the fact that the relation between information-seeking by teachers and knowledge on the part of students was found to be especially strong among students with low DAT scores, as we shall see below. That is, it seems unlikely that well-informed students of low intellectual ability would affect information-seeking by teachers but that well-informed students of high intellectual ability would not. It seems more reasonable that the causal direction was the other way round, that activity by teachers led to students being better informed about their chosen occupations. In any case, the result of Table IV-6 seems strong enough to encourage both school personnel and researchers to look further into the potential effects of visiting the counselor and supportive information-seeking by teachers, and especially into combinations of these factors.

The next obvious question, of course, is whether the relation shown in Table IV-6 will remain significant when controlled for the academic aptitude of the student. Table IV-7 shows the appropriate analysis and gratifyingly exhibits an over-all significance level of less than .03.

Table IV-7. Percentages of Students in Categories of (a) Schools Where Teachers Spent Indicated Mean Hours Gathering Information About Students, Crossed with (b) Whether Student Had Visited a Counselor, Who Gave Exact Answers to the Question, "How Much Education is Required for This Type of Work?" Shown Separately for Three Levels of Academic Aptitude.

Visited counselor	Mean hours per semester spent by teachers in seeking info.	Type of answer to title question: Partial or vague	Type of answer to title question: Exact	Total	N	Chi-square
		High DAT				
Yes	13.50 - 28.49	40	60	100	103	
No	13.50 - 28.49	54	46	100	59	
Yes	3.00 - 13.49	45	55	100	93	
No	3.00 - 13.49	43	57	100	67	
		45	55	100	322	3.51 NS
		Middle DAT				
Yes	13.50 - 28.49	45	55	100	99	
No	13.50 - 28.49	56	44	100	52	
Yes	3.00 - 13.49	47	53	100	112	
No	3.00 - 13.49	62	38	100	79	
		51	49	100	342	6.96 $P < .10$
		Low DAT				
Yes	13.50 - 28.49	47	53	100	74	
No	13.50 - 28.49	38	62	100	47	
Yes	3.00 - 13.49	59	41	100	102	
No	3.00 - 13.49	64	36	100	101	
		55	45	100	324	12.11 $P < .01$

Total chi-square = 19.10, counting only the contributions of those cells whose direction of disproportionality agrees with that of the cells under low DAT. $P < .03$ for 9 df.

Table IV-7 shows that among students of high intelligence, neither the efforts of the teachers nor of the counselors, nor of both working together, had any significant effect on the amount of knowledge students acquired concerning the education required for their chosen occupations. But when we look at students with middle and low DAT scores, the disproportionalities among the four sub-groups are seen to have become stronger; the value of chi-square increases in the table from top to bottom. In the bottom group, that containing students with low DAT scores, students giving exact answers to the criterion question are seen to have been found relatively more often in schools where the teachers were relatively more active in seeking information about them.

The pattern of percentages in the table is very regular except for the percentages occurring in the second line under "Low DAT;" that is, in the sub-group containing low-DAT students who had not visited a counselor and were in schools with the more active teachers. The percentages here of 38 and 62 violate the pattern of magnitudes seen in the sections for middle DAT and for high DAT. A causal explanation for this anomaly, however, seems hard to come by. The best explanation would seem to be that the deviant 62 percent is a random deviation, the size of it due to the small number of cases (47) on which the percentage is based.*

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*Some searching was done for a possible explanation of this anomaly. Some characteristics of the schools in which the 47 students were enrolled were examined. However, the mean hours spent by teachers in seeking information in these schools were not greater than in other schools whose means exceeded 13.5 per semester, and the proportion of students visiting a counselor was not different from the base rate in all the sampled schools. One difference found was in size of school. The numbers of the 47 students enrolled in schools of various sizes and the numbers expected from the base rate for all schools are shown below, though this information seems to give no help in explaining the anomaly.

Size of school	Obtained no. of students	Expected no. of students
1600 - 5499	15	7.5
900 - 1599	16	23.5
600 - 899	15	7.5
400 - 599	1	8.5

Before summarizing and commenting upon this analysis of our first criterion variable, we might note that some analysis was made of the relation between knowledge about education required for the chosen occupation and frequency of discussing test results with teachers or counselors. A generally positive relation was found between these two variables which was significant beyond the .05 level with 2 df. However, when the analysis was controlled for academic aptitude (6 df), the significance disappeared. Some still further analyses are listed in Appendix IV-A.

In summary, we found in our data no evidence that counselor-student ratio, in itself, was associated with more exact knowledge on the part of students about the educational requirements of their chosen occupations. We did find evidence, however, that actually having visited a counselor was associated with more exact knowledge. This finding, however, must be accompanied by an important qualification; when controlled for academic aptitude, the association was significant only when visiting a counselor was examined simultaneously with the activity of teachers in gathering information about students. That is, differences appeared in the knowledge of the students when they were classified into subgroups not on the basis alone of whether they had visited a counselor (Table IV-3), nor on the basis alone of whether teachers in the school were active in gathering information about them (Table IV-5), but only when they were classified on the basis of both variables at once (Table IV-7).

This result implies that visits to the counselor can have an effect on students' knowledge which is measurable in the mass when the visits occur in a school where the faculty gives active support to the counseling process by engaging in certain aspects of it themselves.*

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*This conclusion assumes that the causal direction is from activity by counselors and teachers to effects to be seen in the student. There is no direct evidence in our data for direction of causality, of course, but this direction seems more reasonable than the opposite.

Students' knowledge is then more exact (so our data suggest) than that of students who do not visit the counselor and are in schools with teachers less active in seeking information about students. This tends to be true, according to Table IV-7, even with the intelligence of the student taken into account, but the effect in our data was particularly strong among students in the lower third of the distribution of DAT-Total scores.

The effect of participation by teachers in guidance activity (which is what we infer to be the import of our information-seeking variable) is particularly clear in Table IV-7. Looking at the percentages of exact answers given by high-DAT students in schools where information-seeking by teachers was in the range of 3.00 to 13.49 hours per semester, we find the figures 55 and 57. The weighted average of these is 56 percent. Looking next at the percentages of exact answers given by low-DAT students in schools in the 13.50 to 28.49 information-seeking range, we find the figures 53 and 62; the weighted average of these is also 56 percent. In other words, although in general the high-DAT students give ten percent more exact answers than the low-DAT students, a difference in participation by teachers can bring the percentage of exact answers given by students in the two groups to the same level. These are the same figures to which we drew attention in connection with Table IV-5. An influence which apparently can increase the percentage of knowledgeable students in a specified group by eleven percent or more is an influence worth investigating. If the effect of teacher participation in the counseling process were to be corroborated in further research, the lesson for school policy would be clear.

Another thing obvious in Table IV-7 is that our predictor variables (visiting the counselor and information-seeking by teachers) were effective among low-DAT students, possibly so among middle-DAT students, and not at all effective among high-DAT students. On the face of it, this result suggests that efforts to increase knowledgeableness about occupations among students of high intellectual ability are likely to meet with little success, while efforts among students of low intellectual ability, in contrast, are likely to pay off. This puts a serious question to those who are urging counselors to turn their attention to the exceptionally talented student. But this point will be argued again later on.

Finally, it might be remarked that the data in Table IV-7 do not, as is the case in a great many questionnaire studies, come from answers given within a few moments of each other to items within the same questionnaire, running the consequent dangers of halo and other effects of "set." The criterion variable and the variable of visiting the counselor, it is true, were taken from students' answers to items within the same questionnaire. The information-seeking variable, however, came from responses of teachers (averaged within schools); and the DAT score came from responses of students recorded four or five months earlier under quite different conditions. The diversity of the sources of the data increases our confidence that Table IV-7 reflects processes which actually were taking place in the schools, and not processes limited to the imaginations of the students.

During this narrative of results concerning the knowledge of students about their chosen occupations a number of interesting questions have arisen. These can be discussed more adequately than here, however, if we wait until we have seen some results concerning other criterion variables. A summary section will be found at the end of this chapter, and Chapter VI will comment more fully on both this chapter and the next. Accordingly, let us turn now to our next criterion variable.

Knowledge of the Abilities and Skills Needed in One's Chosen Occupation

An open-ended item in the students' questionnaire, referring to the student's first choice of occupation, asked, "What abilities and skills must a person have who engages in this type of work?" This item constitutes our second criterion variable. Answers to this question were coded into five categories, whose labels and interpretations were as follows:

Knowledge:	Any type of knowledge, skill, or practice generally learned in school, such as command of the English language, legible handwriting, a good speaker, or any needed course or subject area.
Physical:	Such as strength, vigor, neuromuscular coordination, voice quality, abilities connected with the senses (good hearing, vision, etc.).
Mental:	Such as scientific, academic, mathematical, or artistic ability; qualities of mind such as intelligence, imagination, curiosity; colloquial phrases implying mental ability: "a knack for _____," or "must be good in _____."
Personal:	Character traits such as loyalty, trustworthiness, friendliness; interpersonal skills such as ability to get along with people; personal attitudes or values such as willingness to work hard, desire to help people, ability to take orders and follow them.
Vague:	Don't know; merely repeats the duties of the job; indicates general interest such as he "would really like it"; mentions education or training vaguely such as "lots of education," or "must be professionally trained."

The account of findings connected with this criterion variable will be very short. A weak relation at the .05 significance level (4 df) was found between the type of answer given to this criterion item and counselor-student ratio in the school, but the pattern of the relation was baffling. Students in schools in the lowest category of counselor-student ratio gave proportionally more answers describing knowledge needed, and students in schools in the middle category of counselor-student ratio gave proportionally more vague answers. Students in the highest category gave types of answers with the same frequencies as the base rates. These results seem too irregular to be interpretable in any reasonable way. There was only one other relation which turned out to be statistically significant when the skills-and-abilities variable was tested against our other predictor and control variables; this was the relation of the criterion item with academic aptitude, significant at the .01 level (2 df). This relation, too, fell out in an inscrutable pattern and it seems best to consider both these relations to be chance results. Many other relations were tested, all turning out nonsignificant. They are listed in Appendix IV-A.

In sum, there was no evidence discovered that counselor-student ratio, visiting the counselor, or any other variable was associated (at least in any interpretable manner) with the kind of response students gave to the question about the abilities and skills needed in the student's chosen occupation.

Probably the most interesting result of this item was the following sequence of questions and answers which turned up on one girl's questionnaire:

> Q: What occupations have you thought of as your possible life work? (First choice)
>
> A: Private detective.
>
> Q: What abilities and skills must a person have who engages in this type of work?
>
> A: Good at fighting, shooting, and deducting.
>
> Q: Do you have the necessary skills and abilities for this type of work?
>
> A: I think I'd be OK at the deducting, but I'm not so good at the fighting and the shooting.

It might be suspected that the criterion variable of this section, which yielded such a complete lack of profit to our chief hypothesis, was merely a thoroughly unreliable item. However, it did not draw merely random responses. Evidence against a random-response explanation can be seen in Tables IV-8 and 9, which throw the criterion item against sex, curriculum, and occupational choice. In coding answers for use in these tables, both first-mentioned and second-mentioned skills or abilities were used (more than two were rarely given). If a knowledge or ability generally learned in school was mentioned either first or second, the answer was categorized as "knowledge"; otherwise, the answer was put in the other category. For a fuller explanation of the occupational labels used in these tables, see Table IV-18.

Tables IV-8 and 9 show a difference in pattern of response between males and females. While males showed no significant relation between the criterion question and either curriculum or occupational choice, proportionally more females in the non-college-bound group gave answers of the "knowledge" type than females in the college-preparatory curriculum; and proportionally more females choosing secretarial and office types of occupations gave "knowledge" answers than females choosing other occupations.

Especially interesting is the pattern for females in Table IV-9. Here we see that the proportion of "knowledge" answers given by girls choosing secretarial kinds of occupations was much higher than the proportion giving "knowledge" answers in any of the other occupational categories. At first blush, it might seem reasonable that the nature of instruction in commercial subjects for girls makes it easy to think of knowledge typically acquired in school in connection with that type of work. Yet consider the very low proportion of "knowledge" answers given by those girls planning to become teachers. Is it difficult for students

Table IV-8. Percentages of Students Enrolled in Indicated Curricula Who Described Knowledge Typically Learned in School in Response to the Question, "What Abilities and Skills Must a Person Have Who Engages in This Type of Work?" Shown Separately by Sex.

	Type of answer				
Curriculum	Physical, mental, personal, or vague	Knowledge typically learned in school	Total	N	Chi-square
	Females*				
College preparatory	58	42	100	171	
Commercial and vocational	37	63	100	101	
Mixed	42	58	100	212	
	47	53	100	484	13.99 $P < .001$
	Males				
College preparatory	46	54	100	164	
Commercial and vocational	42	58	100	144	
Mixed	46	54	100	95	
	44	56	100	403	0.72 NS

* 15 girls choosing housewife as first occupation are omitted.

Table IV-9. Percentages of Students Choosing Indicated Classes of Occupations Who Described Knowledge Typically Learned in School in Response to the Question, "What Abilities and Skills Must a Person Have Who Engages in This Type of Work?" Shown Separately by Sex.

	Type of answer				
First-chosen occupation	Physical, mental, personal, or vague	Knowledge typically learned in school	Total	N	Chi-square
Females*					
Science, medicine	69	31	100	75	
Teaching	62	38	100	96	
Other prof. and sub-prof.	58	42	100	77	
Secretary	21	79	100	184	
Skilled	62	38	100	40	
	47	53	100	472	84.40 P < .001
Males**					
Science, medicine	46	54	100	108	
Teaching	48	52	100	29	
Other prof. and sub-prof.	35	65	100	97	
Skilled	47	53	100	130	
	44	56	100	364	3.72 NS

* 15 girls choosing housewife and 12 choosing unskilled occupations are omitted.

** 17 boys choosing sales occupations and 22 choosing unskilled occupations are omitted.

to see what kinds of abilities and skills a teacher needs which might be learned in school -- such as, for instance, knowledge of subject matter?

Although the data for females in Tables IV-8 and 9 show non-random regularities, the shape of the regularities raises some perplexing questions. Some further speculations will be offered in the next section below. There we shall see again patterns similar to those in Table IV-8 and 9 although in relation to a somewhat different criterion variable.

Other relations studied between the abilities-and-skills item and occupational choice are given in Appendix IV-A; they did not change the essentially unprofitable picture delineated here.

Knowledge of Duties in One's Chosen Occupation

With the criterion now to be discussed we come upon a surprise. Should not students be better acquainted with the duties of their chosen occupations in schools where relatively more counselors are available? Should not visiting the counselor result in more specific knowledge of the duties of one's intended occupation? Although we shall find that knowledge of duties in the occupation was indeed related to others of our variables, the pattern of results was not at all what we expected.

All of the criteria discussed in this chapter and the next showed a significant relation with at least some other variable, and in most of these instances the direction of the relation was the predicted direction, as will be seen as we go along. (The poorest showing in this regard was made by the variable discussed in the just previous section, concerning knowledge of abilities and skills needed in the chosen occupation.) However, in the present case of knowledge of duties in the chosen occupation, the simple relations originally planned for test were uniformly found (where they were statistically significant) to be in the direction contrary to prediction! This outcome of course led to further analysis, after which, as will be seen, the picture was interestingly modified.

The open-ended item used was one (Appendix II-A, item 13) which asked the student, in reference to his first occupational choice, "What does a person in this type of work actually do?" Answers were coded as follows:

Specific:	Responses describing acts with localizable beginnings and endings, such as: produces crops and raises animals; in charge of building roads and bridges; types, takes dictation, answers the phone.
General:	Some detail, but without localizable beginnings and endings, such as: does construction and supervision; travel, get to know people; work with nuclear power in industry.
Values:	Describes the goals of specific acts, usually idealistic, such as: help the sick feel needed and wanted; educate the young for the future; molds children into future citizens; makes a lot of money; gets ahead fast.
Vague:	Gives no details, such as: "It depends on ______" ; or substantially repeats the job designation, such as: teaches students; supervises; runs the store; does electrical work.

Relations with Counselor-Student Ratio

The relation between answers to the criterion item about duties and the counselor-ratio in the school is shown in Table IV-10, where it is clear that relatively fewer students in the high-ratio schools gave specific answers, and relatively more in the middle- and low-ratio schools. Furthermore, when this relation is controlled for academic aptitude, the over-all relation manages to remain significant at the .05 level. This latter result is shown in Table IV-11. Still further, it can be

Table IV-10. Percentages of Students in Schools Having Indicated Counselor-Student Ratios Who Gave Indicated Types of Answers to the Question, "What Does a Person in This Type of Work (student's first occupational choice) Actually Do?"

Counselor-student ratio	Type of answer					
	Vague	Value	General	Specific	Total	N
.00323 - .00794	12	14	34	40	100	368
.00168 - .00322	9	10	30	51	100	316
Zero - .00167	9	11	31	49	100	353
Total	10	12	32	46	100	1037

Chi-square using specific answers against all others pooled (2 df) is 10.08, $P < .01$.

Table IV-11. Percentages of Students in Schools Having Indicated Counselor-Student Ratios Who Gave Specific Answers to the Question, "What Does a Person in This Type of Work Actually Do?" Shown Separately for Three Levels of Academic Aptitude.

Counselor-student ratio	Type of answer		Total	N	Chi-square	
	General, vague, or value	Specific				
	High DAT					
.00323 - .00794	71	29	100	144		
.00168 - .00322	57	43	100	89		
Zero - .00167	57	43	100	95		
	63	37	100	328	6.45	P < .10
	Middle DAT					
.00323 - .00794	56	44	100	124		
.00168 - .00322	42	58	100	103		
Zero - .00167	54	46	100	111		
	51	49	100	338	4.63	P < .10
	Low DAT					
.00323 - .00794	48	52	100	86		
.00168 - .00322	49	51	100	111		
Zero - .00167	45	55	100	143		
	47	53	100	340	1.98	NS
		6 df, total chi-square			13.06	P < .05

seen in Table IV-11 that the more intelligent students (that is, those with high DAT scores) gave specific answers less frequently than the less intelligent students. Only 37 percent of those with high DAT scores gave specific answers, but 53 percent of those with low DAT scores did so. This relation with DAT is significant beyond the .001 level of confidence (2 df).

The finding that students of higher academic aptitude less frequently gave specific answers goes contrary to the usual expectation that the more intelligent students will acquire more knowledge, whatever its kind, than the less intelligent students. This perplexity, however, can be disposed of quickly. We noted in Chapter III that high-DAT students were found in greater proportion in college-preparatory curricula than elsewhere (see Table III-15). Accordingly, we see in Table IV-12 that when the relation between academic aptitude and the criterion question is controlled for curriculum it becomes non-significant. That is, there was no significant relation remaining between DAT scores and the criterion question about duties in the occupation when the curriculum of the student was taken into account. The momentary threat of an inexplicable relation with intellectual ability can be put out of mind.

We still have to consider, however, the relation which was significant even when controlled for academic aptitude between counselor-student ratio and the criterion item (Tables IV-10 and 11). This finding is not very satisfying since the relation is in the direction opposite to what seems the desirable direction. Will any other control variable remove the undesired direction of relation? Even if it will not reverse the direction of relation, will some other control variable at least reduce the strength of the relation to non-significance? Though

Table IV-12. Percentages of Students Within Indicated Levels of Academic Aptitude Who Gave Specific Answers to the Question, "What Does a Person in This Type of Work Actually Do?" Shown Separately for Groups of Students Enrolled in Indicated Curricula.

Academic aptitude	Type of answer: General, vague, or value	Type of answer: Specific	Total	N	Chi-square	
	College preparatory curriculum					
High DAT	72	28	100	180		
Middle DAT	66	34	100	94		
Low DAT	62	38	100	45		
	69	31	100	319	2.31	NS
	Commercial curriculum					
High DAT	35	65	100	23		
Middle DAT	30	70	100	43		
Low DAT	24	76	100	37		
	29	71	100	103	0.80	NS
	Vocational curriculum					
High DAT	58	42	100	26		
Middle DAT	54	46	100	48		
Low DAT	50	50	100	72		
	53	47	100	146	0.46	NS
	Mixed curriculum					
High DAT	56	44	100	62		
Middle DAT	41	59	100	111		
Low DAT	41	59	100	135		
	45	55	100	308	5.28	NS
		8 df, total chi-square			8.85	NS

disappointing. a non-significant result would be more understandable than the direction of the outcome in Tables IV-10 and 11.

When controlled for size of school, the relation between counselor-student ratio and specificity about duties remained significant at the .05 level (6 df) and maintained the same upside-down direction. Moreover, the same pattern resulted when the relation was controlled for visiting the counselor (4 df, $P < .05$) and when it was controlled for frequency of talking with teacher or counselor about test results (6 df, $P < .02$). At last, however, when the relation was controlled for mean number of hours spent by teachers in seeking information, the relation (tabulated with 4 df) weakened to non-significance. Just as in connection with the first criterion item discussed in this chapter (knowledge of required education), information-seeking by teachers turns up in an important way. Our conclusion now must be that counselor-student ratio in the school is not associated with specificity of answer about duties in the occupation when amount of information-seeking by teachers is taken into account.

Relations with Other Variables

What about other predictor variables in relation to knowledge of duties in the occupation? None did even as well as counselor-student ratio. The relation between the duties criterion and visiting the counselor was non-significant (1 df). Visiting the counselor and talking to teachers or counselor about test results taken together as multiple predictors gave a relation with the duties criterion significant at the .05 level, but the relation was too irregular to permit any reasonable conclusion. Other relations with the criterion item were explored but to no profit; these further explorations are listed in Appendix IV-A.

In sum, we have seen that neither of our chief predictor variables (counselor-student ratio and visiting the counselor) maintained a significant association with the duties criterion when controlled for one of our other variables; furthermore, the other variables in our list also failed to show a significant relation with the criterion. But our business with this particular criterion item is not yet finished; what are we to think about the fact that the original significant relations found were opposite to prediction? This mystery of the upside-down relations coaxed us into some further investigation.

As it does upon many occasions, sex seemed a possible line of inquiry in this situation. Perhaps the sexes differed in the way they would respond to the presence of counselors in the school and perhaps this difference would be reflected in their patterns of answers to the question about duties in the intended occupation. Following this hunch, the analysis of Table IV-11 was repeated for males and females taken separately. That is, the criterion variable was tested against counselor-student ratio with academic aptitude controlled; and this was done among males only and then among females only. The result among males was non-significant (with 6 df) throughout the tabulation. The result for females showed the usual upside-down direction of relation only among females with high DAT scores (2 df, $P < .02$); the relation over-all (6 df) was non-significant. Since controlling on sex thus took away the statistical significance of the relation between the duties criterion and counselor-student ratio, it is apparent that sex figures somehow in the relation between the two; but how does it figure? Table IV-12 suggested that curriculum was important also; but again, how?

The Hypothesis of Near and Far Goals

I am indebted to Kazutaka Furuhata for the hypothesis which enabled the analysis to be carried further. His proposal was that occupations could be conceived as psychological goal regions (using the term region in its Lewinian sense), that learning what one actually will be doing in such a goal region is part of the path to the goal region and (furthermore) a part lying relatively near the goal region itself, and finally, that the time perspective of the high school junior is such that an occupation to be entered just after high school is a region psychologically rather close while an occupation to be entered after college is psychologically very distant for the typical student. Consequently, students choosing occupations requiring higher education would be less likely to have reached the region along the path which calls for learning what one actually does upon entering the occupation while those students choosing occupations to be entered after high school would be more likely to have reached that point on the path.

Learning the duties and tasks characterizing the occupation is an activity lying late along the path to the occupational entry (so one might theorize) because learning these things brings only weak and infrequent rewards earlier in the path. At the earlier points, rewards are given for performing the expected school tasks, for becoming skillful in the social graces, and the like. A boy might be ever so knowledgeable about anatomy, pathology, and the uses of all the latest drugs; he might be skillful at using a stethoscope, a knee hammer, and a tongue depressor; his tone of voice might be ever so reassuring to sick people. Such knowledge and skill might help him occasionally in a biology course and gain him smiles from one or two teachers. It would not, however, be of much use in getting a good grade in English literature, algebra, civics, or physical education. It would not, according to the latest reports on the values of the typical adolescent, help him to attract girls who would bring him prestige in the eyes of his peers. On the other hand, the young man who exhibited such knowledge and skill during the year before his entry into medical school would attract admiration and important rewards from professors, fellow students, and marriageable young ladies.

According to the hypothesis of near and far goals, the student will become informed about the typical activities of a region if he is sufficiently close to entering the region; and we would expect the college-bound high school junior, still perhaps five years away from his occupational goal, to be less well-informed about its duties than the non-college-bound junior who is soon to enter his occupation. The prediction, in other words, is that students with near occupational goals will be found to be better informed about the duties of their chosen occupations than students with distant occupational goals. (On the other hand, we should expect the college-bound student to be at least as well informed as the non-college-bound student in regard to the educational requirements of his chosen occupation since this is the information he needs to enter the region lying next along the path.)

The hypothesis of near and far goals, then, predicts that students in college-preparatory curricula would give proportionally fewer specific answers to the criterion question about duties than would students in other curricula. Indeed, we found this to be the case, as is shown in Table IV-13. The P-value is far beyond .001. Furthermore, the relation maintained itself when controlled for academic aptitude, as is seen in Table IV-14. Within every level of DAT, the percentage of specific answers given by college-preparatory students was at least 12 percentage points lower than the next lowest figure. The relation was highly significant within every level of DAT and, of course, significant overall.

Table IV-13. Percentages of Students in Indicated Curricula Who Gave Specific Answers to the Question, "What Does a Person in This Type of Work Actually Do?"

Curriculum	Type of answer		Total	N
	General, vague, or value	Specific		
College preparatory	69	31	100	311
Commercial	28	72	100	100
Vocational	54	46	100	135
Mixed	44	56	100	291
	53	47	100	837*

Chi-square = 67.52, 3 df, $P < .001$

*The total number of cases where curriculum is a pertinent datum is reduced in comparison to other tabulations because of some lack of response from schools which were asked for transcripts.

Table IV-14. Percentages of Students in Indicated Curricula Who Gave Specific Answers to the Question, "What Does a Person in This Type of Work Actually Do?" Shown Separately for Three Levels of Academic Aptitude.

Curriculum	Type of answer: General, vague, or value	Type of answer: Specific	Total	N	Chi-square	
	High DAT					
College preparatory	72	28	100	180		
Commercial	35	65	100	23		
Vocational	58	42	100	26		
Mixed	56	44	100	62		
	65	35	100	291	16.50	P < .001
	Middle DAT					
College preparatory	66	34	100	94		
Commercial	30	70	100	43		
Vocational	54*	46*	100	48		
Mixed	41	59	100	111		
	50	50	100	296	18.78	P < .001
	Low DAT					
College preparatory	62	38	100	45		
Commercial	24	76	100	37		
Vocational	50*	50*	100	72		
Mixed	40	60	100	136		
	44	56	100	289	12.81	P < .01
		9 df. total chi-square			48.09	P < .001

*The disproportionality in these cells is slight, and the significance levels would not substantially be affected by removing the contribution of these cells.

The differences seen in Tables IV-13 and 14 between students in the college preparatory curriculum and students in other curricula seem amply large enough to be of practical importance. The tables show many more students in college-preparatory curricula than in other curricula who displayed very meager conceptions of what activities their occupations would entail when they were asked what people in those occupations "actually do." Furthermore, these differences were found within every level of intellectual ability. These findings raise an important question for practitioners. Are college-bound students indeed poorly informed about what it will be like to be a member of the professions toward which they are pointing themselves? If this is the case with any large number of students, we should expect some of them eventually to find themselves pursuing occupations incompatible with their natures, and consequently to leave these occupations for others. Since a college education is expensive, such disillusionment may represent an important amount of waste of time and talent. I shall agree with those who claim that large parts of a college education redound to the benefit of the individual (and to the benefit of society) no matter what his occupational goal may be. Nevertheless, not any college curriculum is appropriate for any occupation, and the amount of waste due to inaccurate perceptions of an occupation before entering college is a matter worth further investigation.

Having received this much encouragement for the hypothesis of near and far goals, let us recall that a corollary was that knowledge of the education required for the occupation should be at least as high among college-preparatory students as among students in other curricula. Indeed, we found that knowledge of educational requirements was somewhat more frequently exact among college-preparatory students than among others when all students were pooled (3 df, $P < .05$), though the relation became non-significant when controlled for academic aptitude. The latter result is shown in Table IV-15. This result supports the corollary prediction.

Now that the hypothesis of near and far goals has found good support, the next step is to return to the relations between the duties criterion and other variables and perform the tests again, but now controlling the relations for curriculum.

When the relation between answers about duties and counselor-student ratio was tested with curriculum taken into account, the relation still showed the upside-down direction, though at a significance level ($P = .05$, 6 df) weaker than we saw in Table IV-10. However, when the relation was controlled both for curriculum and academic aptitude (17 df), the significance vanished. With curriculum as a control variable, the relations were also tested between the duties criterion and visiting the counselor, information-seeking by teachers, talking about test results, and academic aptitude. All of these relations were non-significant. In other words, counselor-student ratio did not show a significant relation with the criterion of specificity about the duties of the chosen occupation when the curriculum and academic aptitude were taken into account, nor, when curriculum alone was the control variable, did any of the other variables just listed. We have at last done away with the puzzling relations which reared up so startlingly before us when we began our examination of the criterion of specificity about the duties of the occupation.

To recall briefly the hypothesis of near and far goals, we are saying that college-preparatory students are less specific about duties because, in a sense, there is no pressing need for them to be specific.

Table IV-15. Percentages of Students Enrolled in Indicated Curricula Who Gave Exact Answers to the Question, "How Much Education is Required for This Type of Work?" Shown Separately for Three Levels of Academic Aptitude.

Curriculum	Type of answer Partial or vague	 Exact	Total	N	Chi-square	
	High DAT					
College preparatory	44	56	100	190		
Commercial	58	42	100	24		
Vocational	55	45	100	26		
Mixed	54	46	100	54		
	49	51	100	314	5.61	NS
	Middle DAT					
College preparatory	45	55	100	100		
Commercial	55	45	100	44		
Vocational	42	58	100	53		
Mixed	62	38	100	113		
	49	51	100	310	9.88	P < .02
	Low DAT					
College preparatory	52	48	100	118		
Commercial	56	44	100	36		
Vocational	65	35	100	69		
Mixed	55	45	100	139		
	56	44	100	362	2.82	NS
		9 df, total chi-square			13.31	NS

Preparing for college is seen as sufficient unto itself, given the short time perspective of the adolescent; a period closer to entry upon the occupation will be time enough to learn about its duties. Students in commercial and vocational curricula, on the other hand, will be entering their occupations in the very near future; and knowledge of the duties of the associated occupations is a part of finding the path to the place of entry.

The data at hand will permit us to perform a few more tests of the hypothesis of near and far goals. Before proceeding to do so, however, it will be well to consider an alternative hypothesis which could explain more simply, in a sense, the relations which originally surprised us.

The Hypothesis of the Biased Item

If we look again at the criterion item -- "What does a person in this type of work actually do?" -- we might be prompted to say, regardless of any teaching by counselors about the duties of the occupation, and putting academic aptitude aside for the moment, that some curricula in high school contain direct teaching about future jobs. For example, commercial curricula teach the student in direct manner that the duties of a secretary include typing letters and taking phone calls. Vocational curricula teach the student directly that a sheet-metal worker makes ducts for heating systems, a cabinet maker makes chairs and tables as well as cabinets, and a machinist turns metal parts on a lathe. On the other hand, a mathematics course does not often inform the college-bound student about the duties of an engineer nor does a biology course inform him about the duties of a physician. If commercial and vocational curricula do indeed teach the students about the duties of the associated occupations to a greater extent than do college-preparatory curricula about post-college occupations, then we should expect to find, among students choosing a particular type of occupation not requiring college training, that those in the associated curriculum know more about its duties than do students choosing the same occupation but enrolled in other curricula since the former would have been exposed in school to more direct information about the duties than would the other students.

The hypothesis of the biased item also suggests that the pattern of answers would be different for the two sexes since the students in the commercial curriculum are predominantly females and those in the vocational curriculum are mostly males. In fact, we saw in the last section a suggestion that it would be important to control for sex.

To test the hypothesis of the biased item, we shall have to take into account curriculum, occupational choice, and sex, as well as the criterion item about the duties of the occupation. It follows from the hypothesis that, if we select students who had chosen a particular kind of occupation, then those enrolled in the associated curriculum should be found to have given specific answers more frequently than those enrolled in other curricula. For example, among students who chose occupations in the secretarial, clerking, and sales group, relatively more of those enrolled in the commercial curriculum should have given specific answers about duties, and relatively fewer of those enrolled in other curricula. In the same way, among those choosing occupations in the skilled trades, the specific answers should have come with relatively more frequency from those students enrolled in the vocational curriculum.

However, we see in Tables IV-16 and 17 that the derivation from the hypothesis of the biased item was not borne out. In every occupational group in both tables, the relation between curriculum and specificity of

Table IV-16. Females Only: Percentages of Those in Indicated Curricula Who Gave Specific Answers to the Question, "What Does a Person in This Type of Work Actually Do?" Shown Separately for Those Choosing Occupations in Indicated Classes.

	Type of answer				
Curriculum	General, vague, or value	Specific	Total	N	P
	Science, medicine, teaching				
College preparatory	82	18	100	94	
Commercial and vocational	79	21	100	14	
Mixed	81	19	100	58	
	81	19	100	166	NS
	Other professions				
College preparatory	74	26	100	31	
Other	75	25	100	16	
	74	26	100	47	NS
	Sub-professional				
College preparatory	85	15	100	13	
Other	50	50	100	14	
	67	33	100	27	NS
	Secretary				
College preparatory	32	68	100	19	
Commercial or vocational	14	86	100	63	
Mixed	13	87	100	97	
	16	84	100	179	NS
	Skilled*				
Commercial and vocational	33	67	100	12	
Mixed	22	78	100	27	
	26	74	100	39	NS
					NS

* 3 girls in college preparatory curriculum omitted.

NOTE: Although some percentage differences may at first glance seem large, inspection of the corresponding Ns will show that the percentage differences represent few cases and are easily due to random deviations from base rates. Where Ns were small, tabulations of exact probabilities were used to ascertain significance instead of the chi-square distribution.

Table IV-17. **Males Only: Percentages of Those in Indicated Curricula Who Gave Specific Answers to the Question, "What Does a Person In This Type of Work Actually Do?" Shown Separately for Those Choosing Occupations in Indicated Classes.**

	Type of answer				
Curriculum	General, vague, or value	Specific	Total	N	P
	Science, medicine, teaching				
College preparatory	69	31	100	81	
Commercial or vocational	60	40	100	20	
Mixed	57	43	100	28	
	65	35	100	129	NS
	Other professions				
College preparatory	55	45	100	31	
Commercial or vocational	42	58	100	12	
Mixed	81	19	100	16	
	59	41	100	59	NS
	Sub-professional				
College preparatory	64	36	100	11	
Commercial or vocational	50	50	100	16	
Mixed	42	58	100	12	
	51	49	100	39	NS
	Skilled				
College preparatory	53	46	100	19	
Commercial and vocational	59	41	100	76	
Mixed	40	60	100	30	
	54	46	100	125	NS
					NS

NOTE: Although some percentage differences may at first glance seem large, inspection of the corresponding Ns will show that the percentage differences represent few cases and are easily due to random deviations from base rates.

answer was non-significant. Tables IV-16 and 17 present a reasonable test of the hypothesis of the biased item and provide no support for it whatever. We shall conclude that specific answers to the criterion item were not to any significant degree due to bias in the item in favor of those students selecting an occupation for which their curriculum was training them. We can return to the hypothesis of near and far goals. Before doing so, however, a couple of notes about the tabulation of occupational choices are in order.

Occupational classifications. The reader may wonder why the occupations in Tables IV-16 and 17 were grouped the way they were. The occupational names and descriptions written on the questionnaires by the students were coded at the beginning of analysis into groupings which were generally parallel to that used in the Dictionary of Occupational Titles of the U. S. Employment Service. The complete list of original code categories is given in Appendix 3 of Hastings et al. (1960). For the purposes of the present report, the original code categories were further collapsed with an eye to the usual amounts of education required by the occupation and the kind of curriculum most suitable to preparing for it. Appendix IV-B of this report contains this condensed list of code categories. Finally, the code categories appearing in Appendix IV-B were still further condensed for the purposes of Tables IV-16 and 17, resulting in the nine categories shown in Table IV-18. It should be kept in mind that there are inevitably a few students classified under each abbreviated occupational heading for whose occupations the abbreviated heading is an inaccurate designation.

The reader may be curious also about the distribution of occupational choices within our sample among curricula and sexes. If so, he can find this information in Appendix IV-C.

Table IV-18. Occupational Categories Used in Analysis.

Abbreviation	Typical occupations	Includes these categories from App. IV-B
Science	Physical, chemical, or biological scientist, mathematician, engineer.	00, 01
Medicine	Physician, nurse, pharmacist, veterinarian.	03, 10
Teaching	Teacher, professor, librarian.	13
Other Prof.	Accountant, author, journalist, architect, lawyer, social worker, clergy.	02, 04, 05, 11, 12, 14, 15
Sub-Prof.	Aviator, artist, entertainer, draftsman.	20-23
Sales or Secretary	Salesman, secretary, model, clerk.	30-33
Skilled	Armed services, police, barber, repairman, farmer, skilled crafts (electrician, mechanic, etc.).	40-63
Vague	Semi-skilled, unskilled, or vague descriptions.	70, 80
Housewife	Housewife.	90

To recapitulate, we entertained the hypothesis that students in such courses as business English, bookkeeping, woodworking, and electrical shop would be likely to learn something about the specifics of the duties of the associated occupations, but students in college-preparatory courses would be less likely to learn about the specifics of the occupations to which a college diploma could lead. If this hypothesis were to be true, it would follow that, among students choosing any given class of occupation (using classes homogeneous in respect to specificity of high school training), those students in the associated curriculum would be able to give more specific answers concerning the duties of the occupation than would students in other curricula, and would probably do so. Tables IV-16 and 17 showed that this outcome failed to occur within any of the occupational-choice groups for which there was a sufficient number of students to test the hypothesis. Having thus found the hypothesis of the biased item to be without support, we shall devote some further attention to the hypothesis of near and far goals.

Near and Far Goals Continued

The hypothesis of near and far goals led us to examine the specificity of answers given by students in the several curricula; and we saw in Table IV-14 that students in the college-preparatory curriculum, regardless of academic aptitude, gave specific answers about duties less frequently than did students in other curricula. In further examination of the data, however, we have discovered that the sex of the student and his occupational choice are important in elucidating the relation between curriculum and specificity of knowledge about duties. Accordingly, we shall carry somewhat further our examination of the hypothesis of near and far goals, presenting some findings concerned not only with curriculum and specificity of answer to the criterion question, but also with sex and type of occupational choice.

If students with near occupational goals have more specific knowledge of the duties in their chosen occupations than students with far goals, then it would be well, in testing the hypothesis, to be as sure as we can be that we have selected students whose goals are indeed near or far, as the case may be. Table IV-19 was constructed by first separating the answers of female students from those of males. Within each sex, groups were then formed consisting (a) of students enrolled in college-preparatory curricula who chose occupations of types usually or frequently requiring higher education, and (b) of students in other curricula who chose occupations typically associated with commercial and vocational curricula and not requiring further formal education. In other words, this analysis does not include all students but only what we might consider to be the "pure cases" or the "extremes" from the point of view of the hypothesis of near and far goals.

The relations in Table IV-19 are very strongly in the direction predicted. For both sexes, the percentage of specific answers to the question about duties was significantly greater in the group with near goals than in the group with far goals. Not only were the differences highly significant statistically, but they were very large from the practical point of view also. The difference among boys was 24 percentage points, and among girls it was 66 percentage points.

Why is it that the relation was stronger for girls than for boys? Could it be that, psychologically, the far goals were even farther for girls than for boys? Perhaps post-college occupational goals were for many girls possible or alternative goals which they would someday reach

Table IV-19. Percentages of Students Among Those with Near and Far Occupational Goals Who Gave Specific Answers to the Question, "What Does a Person in This Type of Work Actually Do?" Shown Separately by Sex.

	Type of answer				
Group	General, vague, or value	Specific	Total	N	Chi-square
	Females*				
Far goals: in college-preparatory curriculum and choosing science, medicine, teaching, other prof. or sub-prof. occupations	81	19	100	142	
Near goals: in other curricula and choosing secretary or skilled occupations	15	85	100	185	
	44	56	100	327	138.86 P < .001
	Males				
Far goals: in college-preparatory curriculum and choosing science, medicine, teaching, other prof. or sub-prof. occupations	74	26	100	112	
Near goals: in other curricula and choosing sales or skilled occupations	50	50	100	113	
	62	38	100	225	13.28 P < .001

* Girls choosing housewife omitted.

if they did not turn off the path toward a different goal--that of marriage and family. If this were the perception of a girl, the post-college occupation would be psychologically farther away because the probability ever of reaching it would be lessened.

These results strongly suggest that the problems to be met in getting information to students about the nature of their chosen occupations will be very different among students with near goals on the one hand and among those with far goals on the other hand. This and other points will be discussed later.

Table IV-19 does not include all the students in the sample. The relation between sex and specificity of answer about duties was tested on the entire sample (N = 1034) and it was found that 50 percent of females gave specific answers but only 41 percent of males; this difference was significant at the .01 level of confidence (chi-square 6.79, 1 df).

Ignoring occupational choice for the moment but taking all students for whom the necessary data were available, we have Table IV-20, which shows the relation between the criterion question and curriculum for males and females separately. This table represents the same scheme of analysis as Table IV-13, except that the data have been separated by sex. The over-all chi-square of 66.21 in Table IV-20 is significant beyond .001, which again supports the hypothesis of near and far goals; both among males and females, specific answers tended to be fewer among college-preparatory students than among students in other curricula. Although the relation among males was not significant by itself, the direction of the relation was the same as that among females. Here again, as in some earlier tables (IV-8, 9, 19) the relation was weaker for boys than for girls.

Table IV-20. Percentages of Students Enrolled in Indicated Curricula Who Gave Specific Answers to the Question, "What Does a Person in This Type of Work Actually Do?" Shown Separately by Sex.

	Type of answer				
Curriculum	General, vague, or value	Specific	Total	N	Chi-square
	Females*				
College preparatory	74	26	100	163	
Commercial and vocational	28	72	100	102	
Mixed	41	59	100	208	
	49	51	100	473	60.86 $P < .001$
	Males				
College preparatory	64	36	100	154	
Commercial and vocational	53	47	100	141	
Mixed	52	48	100	93	
	57	43	100	388	5.35 $P < .10$
			Total chi-square	4 df,	66.21 $P < .001$

* Girls choosing housewife omitted.

Taking commercial and vocational curricula along, we should expect those students choosing associated occupations to more frequently give specific answers to the criterion question than students choosing non-associated occupations. Because the male students in commercial curricula numbered only 13 in our sample and the females in the vocational curricula only 16, these were omitted from Table IV-21, which displays the results of examining these relations. Again, the expected relation occurred among girls though not among boys.

The hypothesis of near and far goals does not tell us precisely what to expect from students enrolled in the college-preparatory curriculum taken as a group since a student in the college-preparatory curriculum who tells us he wishes to become a machinist seems to be presenting us with somewhat conflicting evidence about his occupational goal. Without making any guesses, therefore, we tabulated the answers to the criterion question given by students enrolled in college-preparatory curricula and choosing various classes of occupation. The dependence in the table for boys did not reach the .05 level of significance (chi-square 6.32, 3 df, $P < .10$), but a relation appeared among girls in college-preparatory curricula which was significant beyond .001; the result for girls appears in Table IV-22.

The result in Table IV-22 shows more frequent specific answers among girls choosing secretarial and clerical occupations and fewer specific answers in all other categories of occupation. It seems especially curious, however, that those girls choosing teaching as a career gave proportionally fewer specific answers than did any of the other three groups. After watching teachers in action for some eleven years, are high school juniors unable to be specific when asked, "What

Table IV-21. Percentages of Students Choosing Indicated Classes of Occupations Who Gave Specific Answers to the Question, "What Does a Person in This Type of Work Actually Do?" Shown Separately for Females in Commercial Curricula and for Males in Vocational Curricula. (See Table IV-18 for explanation of occupational categories.)

First-choice occupation	Type of answer General, vague, or value	 Specific	Total	N	Chi-square	
	Females* in commercial curricula					
Secretary	15	85	100	61		
Other	39	61	100	28		
	22	78	100	89	5.30	P < .05
	Males in vocational curricula					
Skilled	57	43	100	72		
Other**	49	51	100	45		
	54	46	100	117	1.70	NS

* Girls choosing housewife omitted.

** 2 boys choosing business and 8 choosing unskilled occupations omitted.

Table IV-22. Females in College Preparatory Curriculum Only: Percentages Choosing Indicated Classes of Occupations Who Gave Specific Answers to the Question, "What Does a Person in This Type of Work Actually Do?"

First-choice occupation*	Type of answer: General, vague, or value	Type of answer: Specific	Total	N
Science, medicine	76	24	100	34
Teaching	85	15	100	60
Other prof. and sub-prof.	77	23	100	44
Secretary	32	68	100	19
	74	26	100	157

Chi-square = 17.92, 3 df, P < .001

* 3 girls choosing skilled occupations, 3 choosing unskilled, and 2 choosing housewife omitted.

does a person in this type of work actually do?" Because of this perplexity, we looked more closely at the types of answers given by the college-preparatory girls, separating out the several types of answers which we have been throwing together in most of the tabulations in this section. The result is shown in Table IV-23. Here we see, among girls in college-preparatory curricula, that while it was true that a greater percentage of vague and repetitious answers was given by the girls who chose teaching than by girls who chose any other class of occupation, nevertheless the largest portion (40 percent) of the girls who chose teaching gave value answers; that is, when asked what teachers actually do, they answered in terms of ideals or goals toward which teachers work. The percentage of prospective teachers giving the idealistic type of answer (40 percent) was twice as great as the percentage (19 percent) given by the girls planning to enter medicine -- which choice, to be more precise, was in most cases nursing.

Although the tabulation for boys in the college-preparatory curriculum did not show a statistically significant association between occupational choice and type of answer to the duties question, the trend in the tabulation was somewhat similar to the pattern in the results for girls. The tabulation for boys is shown in Table IV-24.

These data argue that prospective teachers among high school girls (and probably among boys also) conceive the things teachers "actually do" more often in idealistic terms than other college-bound students conceive their respective future occupations. This finding seems consistent with a study by Biddle et al (1962) of the perceptions of the role of the teacher on the part of education students in college, non-education students, and working teachers.* Compared to non-education

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* Biddle's results concerning working reachers are not immediately relevant here, but will be mentioned in Chapter VI.

Biddle, Bruce J.; Twyman, J. Paschal; and Rankin, Earl F. Jr. The role of the teacher and occupational choice. School Review, 1962, 70, 191-206.

Table IV-23. Females in College Preparatory Curricula Only: Percentages Choosing Indicated Classes of Occupations Who Gave Indicated Types of Answers to the Question, "What Does a Person in This Type of Work Actually Do?"

First-choice occupation*	Type of answer					
	Vague	Value	General	Specific	Total	N
Secretary	5	16	11	68	100	19
Medicine	10	19	48	23	100	31
Other prof. and sub-prof.	13	16	48	23	100	44
Teaching	25	40	20	15	100	60
	16	26	33	25	100	154

Chi-square = 41.25, 9 df, P < .001

* 3 girls choosing science, 3 skilled, 3 unskilled, and 2 housewife omitted.

Table IV-24. Males in College-Preparatory Curricula Only: Percentages Choosing Indicated Classes of Occupations Who Gave Indicated Types of Answers to the Question, "What Does a Person in This Type of Work Actually Do?"

First-choice occupation*	Type of answer				
	Vague or value**	General	Specific	Total	N
Medicine and other prof.	34	17	49	100	35
Sales and skilled	18	41	41	100	22
Science	14	51	35	100	57
Teaching	56	33	11	100	18
	26	38	36	100	132

* Omitted are 10 boys choosing sub-professional occupations and 8 choosing unskilled occupations.

** These two categories were combined because of paucity of cases: only 17 vague answers and 17 value answers were given (26% of 132 = 34); 6 of the 17 value answers came from among the 18 prospective teachers.

students, the education students were found to approve less gross self-indulgence (such as reading own books during study period or drinking alcohol out of school) by teachers, to approve of teachers allowing the pupils more freedom (as in allowing them free exploration with laboratory equipment or trusting them not to cheat during examinations), and to approve of less strict adherence to school rules. This pattern seems to go along with the results in this report. Perhaps prospective teachers tend to approach their future work with a stronger yearning for utopia than that with which other young people approach their particular occupations (cf. our results) and stronger also than that perceived by others properly to belong to the teaching profession (cf. Biddle's results). Certainly there has been for decades in the United States a strong current of social reform among educators and educational theorists. At the same time, the notorious conformity of educators to local demands and customs, combined with the high rate with which new teachers leave the profession after the first few years, should encourage serious research into the relation between the role perceptions of prospective teachers and the turnover rate. An important related question is that of the motivation of teachers who turn to other specialities within the profession of education such as guidance counseling, school psychologist, supervisor, educational researcher, etc. To what extent is the shift to one of these specialties due to frustration in the role of the teacher?

What Brings Far Goals Nearer?

Our hypothesis of near and far goals seems to have reasonably good support. Students presumably planning on careers requiring higher education gave, on the whole, proportionally fewer specific answers to the criterion question than did students planning to enter their occupations immediately after high school. It still might be true, however, that the after-college career might be psychologically nearer for some students than for others. After all, many students in the college-preparatory curricula did give specific answers; Table IV-13 showed 31 percent. Presumably these students were motivated to find out more about the duties of their intended occupations, or the specific duties were more salient for them than for other college-bound students, or both.

What might distinguish those college-bound students who gave specific answers from the others? Did they learn about their chosen occupations from counselors? from teachers? Were they simply more effective in information-getting, as might be reflected in DAT-Total score?

Table IV-25 displays a search for ways in which some college-bound students might have been influenced or enabled to give more specific answers than other college-bound students about the duties of their intended occupations. The table shows the relation between curriculum and specificity of answer to the criterion item for a series of student subgroups. Each line of the table shows, in condensed form, the relation within a particular subgroup. For example, the first line of the table states that among students in schools having counselor-student ratios between .00323 and .00794, the percentage of students in the college-preparatory curriculum giving specific answers was only 26 percent while the percentage of all students giving specific answers was 41 percent; this disproportionality in a 4 x 2 contingency table (as explained by the footnote) yielded a chi-square value of 40.2, which is significant beyond .001.

If the presence of relatively more counselors in the school were effective in increasing the specificity of students in college-preparatory curricula about their intended occupations (relative to the specificity of

Table IV-25. Students in College Preparatory Curricula Versus Others: Percentages of College Preparatory Students in Indicated Categories of Indicated Variables Who Gave Specific Answers to the Question, "What Does a Person in This Type of Work Actually Do?" Compared to the Base Rate of Specific Answers Among Students in All Curricula.

Variable and category	Percent specific answers: Among college prep'ory students only	Percent specific answers: Among all students	Chi-square*	P**
Counselor-student ratio in school				
.00323 - .00794	26	41	40.2	< .001
.00168 - .00322	42	51	6.5	< .10
Zero - .00167	29	51	29.3	< .001
Visiting a counselor				
Yes	29	46	47.6	< .001
No	35	49	32.6	< .001
Mean hours per semester information-seeking by teachers				
13.50 - 28.49	26	44	51.6	< .001
3.00 - 13.49	36	50	20.6	< .001
Talking with teachers or counselors about test results				
Frequently	33	44	11.6	< .01
Sometimes	29	48	40.5	< .001
Rarely or never	32	48	16.5	< .001
Academic aptitude				
High DAT	28	37	15.5	< .005
Middle DAT	35	51	17.3	< .001
Low DAT	36	56	17.3	< .001

* Chi-square for 4 x 2 contingency table of curriculum versus specific answer (or not) to title question; the .05 level of confidence at 3 df requires a chi-square of 7.82 and the .001 level 16.27.

** P-value of the corresponding chi-square at 3 df in each case. The P-value of the chi-squares totalled over categories is < .001 in the case of every one of the five variables in the table.

students in other curricula), then we should expect the relation (between specificity and curriculum) to be weaker among students in schools of high counselor-student ratio than among students in schools of low counselor-student ratio, since the specificity of the college-preparatory students would more nearly approach the specificity of the other students. To look for this kind of trend in Table IV-25, note that every contingency table from which the chi-square values in Table IV-25 were computed contained three degrees of freedom; consequently, the chi-square values are a monotonic reflection of the strength of the relation in each category of counselor-student ratio; and we should expect to find the smaller chi-square values associated with the higher counselor-student ratios.

As can be seen in the Table, the relation between specificity and curriculum was not weaker in schools of higher counselor-student ratio. In our sample, at least, the relation was strongest in the schools of highest counselor-student ratio (i.e., the chi-square value was the largest). And it should be noted, of course, that the percentage of college-preparatory students giving specific answers was lower than the base rate for all students in every line of Table IV-25, meaning that college-preparatory students were less often specific than were other students within every category of every control variable in the table.

The remainder of the table is to be read similarly. Within every category but one listed in the table, the college-preparatory students gave a significantly lower percentage of specific answers about the duties of their occupations than the base rate for all students; and even in the one category the percentage was close to the .05 level of significance.

As reflected in the chi-square values, the relation between curriculum and specificity was stronger in our sample for students in schools of high counselor-student ratio than in schools of lower ratios, for students who had visited the counselor than for students who had not, and for students in schools where the teachers were more active in seeking information about students than in schools where the teachers were less active. These differences in strength of relation, however, were not tested for significance. It is sufficient for our purposes that the relation between specificity and curriculum was significant for substantially every category of every variable; no variable made enough difference in the relation to yield a non-significant relation in any one of its categories.*

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*I am ignoring the middle category of counselor-student ratio since the result is close to significance in the same direction as all the other results and since a weakening of the relation in the middle category of the predictor variable would only make the effects of the predictor variable incomprehensible.

In sum, the analysis of Table IV-25 identifies for us no factors which might affect the likelihood that college preparatory students would show knowledge of specific duties of the likelihood that other students would fail to show specific knowledge. In other words, our attempt to find a factor beyond that of the near or far goal which would enable us to predict the specificity of the student's knowledge about occupational duties has been in vain. To put it still another way, we have not found any factor which brings far goals nearer.

Steps in the Path: Knowledge of Educational Requirements versus Knowledge of Duties in the Occupation

We saw in the first section of this chapter that there was some evidence that knowledge of educational requirements of the chosen occupation was enhanced if the student had visited the counselor in a school where teachers were active in seeking information about students (Table IV-7).

In this section, we have seen that students in the college-preparatory curriculum were actually less clear about the duties of their chosen occupations (to judge from their answers) than were students in other curricula; and furthermore, that this relation was not substantially altered by counselor-student ratio, by visiting the counselor, by information-seeking on the part of teachers, nor to any important degree by other variables (Table IV-25). These data suggest that the activities of teachers and counselors serve to encourage students to become more exact about the educational demands upon them but not about the types of duties which will devolve upon them after they have obtained the formal education demanded by their chosen occupations. In fact, those students facing the largest amount of educational preparation remain significantly less clear about the details of the occupations into which their education will lead them.

This interpretation reminds one of the assertion often found in the sociological literature that school people tend to value higher education as an end in itself. According to this view, teachers and counselors would encourage students to go to college -- especially those who seemed likely to succeed in college -- and would feel their own goal (as teacher or counselor) to be achieved once the student had been persuaded to attend college. Teachers and counselors presumably would see the post-college career as following upon the bachelor's degree inevitably and with minor hindrance, or at least they would see the post-college career as being of less concern to them (as teachers or counselors) than the student's college education itself. To interpret out data in this fashion, admittedly, is to go somewhat beyond the bald facts of the case. Nevertheless, the interpretation seems worth submitting to disproof or support from further research. Furthermore, such a hypothesis has interesting implications for school policy in respect to guidance. Let us continue this digression from our main narrative to consider not only this hypothesis concerning teachers' perceptions of college-going on the part of students, but also some other possible implications of the data presented in this chapter.

Given the data on the comparatively low level of knowledge among college-preparatory students about the duties of their chosen occupations, it might seem at first thought that we should urge teachers and counselors to try to turn the attention of college-bound students to the specifics of what they will find themselves doing when they actually enter, after college, upon their occupations. But on second thought, it seems likely that such an effort would mesh neither with the usual goals of guidance nor with the facts of the situation.

In the first place, it would certainly be very difficult (and would surely require more time than that of one generation of teachers) to change the orientation of teachers and counselors from that of valuing higher education intrinsically to that of perceiving higher education merely as instrumental in achieving occupational goals. Such a value system as this is anchored in many other beliefs and values, buttressed by past decisions and present commitments, and welded into the very framework of the self-concept. It is not to be changed by classes in summer school nor by exhortations from the principal. To change such a deeply-anchored value system (if, indeed, it exists widely among teachers) would be very uncertain undertaking and a very costly one if successful.

In the second place, many a student might devote many an hour to learning what kinds of acts actually make up the day of a person in a particular occupation only to find, during the broadening experience of his college years, a different occupation which attracted him more. Interests of high school students are not so well informed, the diagnosis of the high school counselor so exact, nor human beings so narrowly talented and unadaptable that a post-college occupation can be fixed upon in high school with great certainty. Of course, we know that some students (perhaps few) will have developed by the later years in high school a singleness of occupational purpose and a clarity about the nature of the occupation which will carry them methodically forward into it. For the more typical student, however, a campaign to instill detailed knowledge of the "chosen" occupation might be a campaign which rides off in all directions except the one the student finally takes.

In the third place, the problem of focusing the student's attention on the details of his "chosen" occupation would be as difficult as that of focusing the teacher's and counselor's advice upon it. If our hypothesis of near and far goals is correct in its assumption of the relatively short time-perspective of the high school student, then it would be next to impossible to make a detailed picture of a future occupation become important for the typical student as a guide to action. The effort to do so would be both fruitless and thankless. The rewards accruing to the student who cleaves to the more usual adolescent value hierarchy must far outweigh the distant instrumental value of knowledge about a more-or-less uncertain future occupation.

The refractoriness of these conditions, however, need not imply that all is being done that can be done. Putting these very predilections of student and teacher together with the occupational uncertainties of the college-bound student, the suggestion is clear that profit might be made from putting the guidance of the college-bound student into the same time perspective as the guidance of the non-college-bound. That is, the guidance counselor might ask the same question of both: "What kinds of things do people actually do who do what you are going to be doing after high school? Can you do these things and go on doing them for a long period of time?" The answer to this question for the non-college-bound student is a list of typical acts associated with the occupation he hopes to enter. For the student going on to higher education, the answer should be a list of acts typical of the kind of institution and curriculum he hopes to enter.

To help orient the college-bound student, perhaps a list of things one does in educational institutions beyond high school could be made up from the answers to questions such as the following. How does field work in engineering differ from field work in botany or social work? Do college professors like students to ask questions? Do students like fellow-students to ask questions? How many books per semester does a college student read? Does a college student have to study every night? How much is there in the way of daily assignments? Is a technical institute like "manual training"? How much handling of wire and switches does a major in electrical engineering do? How does an engineering school differ from a technical institute? How does a business college differ from a college curriculum in business? Is a college major in business administration like bookkeeping in high school?

Are the abilities needed by a history major different from those needed by a French major or a psychology major? What will be the required subjects and what varieties of elective subjects will be available? What provision is made in college for a place to study? What is to be gained or lost from joining a fraternity? How do classroom customs differ from those in the high school? When you talk too much in class, are you sent to the president? What do you do between classes? What kinds of extracurricular activities are available? What do college students admire in a fellow-student? In short, what does a person in college actually do?

Such questions as these might be answered (and raised, if need be) by teachers and counselors during the student's final year in high school. Better yet, the patterns of action might be demonstrated by the manner of conducting classes for the college-bound students during their last year in high school. This would give more concrete answers than words, it would suggest other questions to the student, and it would help the student to discover how compatible he could expect to find college life. Another way to describe the goal here would be to say that it is to improve the clarity of the student's perception of the role of being a college student. As with the teacher just entering the teaching profession, the neophyte college freshman will surely encounter comparable difficulties if he enters college with a discrepancy between his perception of the role of the college student and the role of the college student as reality demands it be taken. It seems reasonable to postulate that drop-outs early in the teaching profession and drop-outs early in college are both due in many cases to inaccurate role perceptions.

Some curricula beyond the high school, of course, are designed to prepare students for certain narrowly defined fields of occupation: civil engineering, accounting, nursing. In such fields as these a student may quit training because he finds the demands upon him as a trainee uncongenial, or perhaps equally likely, because he perceives the duties of the oncoming occupation uncongenial. Other curricula, as is the case with most of the liberal arts majors, leave the picture of a future occupation largely untouched. In the fields of study not specific to a particular occupation a drop-out may more likely be due to lack of adaptation to the role of student than to lack of satisfaction with a developing picture of a particular occupation. It is clear from college records of transfers and changes of major that many students find their fields of interest and occupation during their college years, not before.

In sum, it may be that "going to college" is a reasonable enough "occupational" goal for many high school students, if we insist in addition that they know that they must choose at the outset some *kind* of higher institution and some *kind* of major, setting aside other opportunities which the institutions offer. Perhaps greater clarity on the part of the college-bound student about the demands and opportunities in higher education is a reasonable goal for the guidance counselor; perhaps clarity about the demands of a particular post-college career is not.

Knowledge of Duties Continued

To recapitulate, we have examined the hypothesis of near and far goals and have found good support for the proposition that students who are presumably planning to enter occupations immediately after high school more frequently give specific answers to a query about the *duties* of the chosen occupation than do students planning on occupations which require college training (Tables IV-13, 14, 19, 20, 21). At the same time, the two groups showed about equal knowledge of the *educational requirements* of their intended occupations (Table IV-15).

We also entertained a rival hypothesis to that of the near and far goals; namely, that of the biased item. The latter hypothesis found no support (Tables IV-16, 17).

These explorations were subsidiary to the main question in this section of the relation between the criterion question about the duties of the chosen occupation and the counselor-student ratio in the school (other predictor variables were shown to be unrelated to the criterion). We had turned up at the beginning of this section a surprising relation showing that students in schools with relatively more counselors, compared to those in schools with relatively fewer, gave a lesser frequency of specific descriptions of the duties of the occupations they had named as first choice (Tables IV-10 and 11). After exploring the hypothesis of near and far goals, we are now justified in attributing the difference in specificity about duties to the proximity of the student's occupational goal rather than to some odd effect from counselors. It remains, however, to return to the criterion question and its relation to counselor-student ratio and see whether the sex and curriculum of the student can remove the relation which originally sent us scurrying for explanations.

The rest of the story now becomes very brief. To carry the analysis to its conclusion, tables like Table IV-11 were constructed; but instead of including all students in one table, separate tables were laid out for the students in each curriculum. Tables were constructed in this way which examined not only counselor-student ratio against the criteron question (knowledge of duties), but which examined the other chief prediction and control variables as well. In other words, four tables were made up with the answer concerning duties in the occupation tabulated against counselor-student ratio in the school, and controlled on academic aptitude: one table for the college-preparatory students, one for the commercial, one for the vocational, and one for those in mixed or uncertain curricula. Similarly, four tables were laid out, controlled for academic aptitude, with the criterion item pitted against visiting the counselor. Another four tables were made with the criterion variable pitted against the mean number of hours spent by teachers in the school seeking information about students, and four tables threw the criterion variable against the frequency with which students reported talking about standardized test results with teachers or counselors. Every one of these sixteen tables yielded a non-significant result.

In sum, the original contrary relations which puzzled us were adequately accounted for by the association between curriculum and specificity of answer to the criterion question. In a final effort to find some predicted significant relation, an analysis was performed in which crossed categories of counselor-student ratio and information-seeking by teachers were compared with specificity of answer while controlling for sex and curriculum simultaneously; and another analysis sought the same relation but controlled for occupational choice as well as sex and curriculum. Both these analyses yielded non-significant results. Still other explorations were made within the answers of each of the sexes, but the results did not change the shape of the picture. The additional relations investigated are listed in Appendix IV-A.

The final outcome of this section, though we were led into some interesting side excursions, is that no evidence was found that counselor-student ratio, or visiting the counselor, or any other faculty activity for which we had an index bore any significant relation to the specificity of the answers the students gave concerning the duties of their intended occupations.

Summary

This chapter took up one kind of criterion about counseling effectiveness; namely, certain domains of knowledge students might have about their future occupations. We looked at the exactness of the knowledge which students exhibited about the education required to enter their chosen occupations, at the kinds of responses they gave about the abilities and skills needed in the occupation, and at the specificity of their knowledge about the duties of the occupation. For each of these three criterion variables, students in schools with relatively more counselors were compared with students in schools with relatively fewer counselors, and students who had visited a counselor were compared with students who had not. In addition to the two chief predictor variables just mentioned, students were also compared on a number of other variables.

All analyses were controlled for the academic aptitude of the student. With academic aptitude taken into account, there was no significant relation found in any simple analysis of the counselor-student ratio of the school versus the student's knowledge about his chosen occupation, nor in any simple analysis of visiting the counselor versus the student's knowledge.

However, we found that visiting a counselor and activity of teachers in gathering information about students, when taken together, were significantly related to the exactness of the student's knowledge about the education required to enter the occupation, and this was true even with the academic aptitude of the student taken into account. We noted in this analysis that the effect of activity by teachers was at least as strong as the effect of visiting the counselor, and that both these predictor variables had their strongest effect among students of low academic aptitude. Furthermore, the differences found were large enough to have practical importance. These results suggested that guidance efforts in the school would have the greatest pay-off per man-hour among students of low academic aptitude, rather than among students higher in academic talent.

The analysis of the students' responses concerning abilities and skills needed in the occupation bore little fruit. It was found that girls tended to mention kinds of knowledge typically learned in school if they were not enrolled in a college preparatory curriculum or if they had named secretary as their first-choice occupation. These tendencies, however, did not appear for boys. In regard to our chief predictor variables of counselor-student ratio and visiting the counselor, no reliable relation was found with the responses concerning abilities and skills.

The first results of an analysis of the students' knowledge of the duties to be found in the occupation were a surprise, since they showed that in schools with relatively more counselors there were relatively fewer students who gave specific answers about duties, and more students who gave specific answers in schools with fewer counselors. This result led to putting forward the hypothesis of near and far goals: that an occupation for a high school junior is a goal comparatively far away in time, that the high school junior tends to learn the details of what will happen in the near regions of the path to the occupational goal while giving little attention to the far regions, and that an occupation to be entered immediately after high school is a "near" goal while an occupation to be entered after college is a "far" goal. Pursuing this hypothesis, we found that it was typically true among males and females alike that students in college preparatory curricula were less likely to give specific answers about duties than students in other curricula, and that students choosing occupations requiring college training were less likely to give specific answers than students choosing occupations requiring less training. Moreover, the differences in specificity were especially (and remarkably) strong when curriculum and occupational choice were combined. An interesting subsidiary finding was that students choosing teaching as a career gave proportionally many more answers of a value or idealistic nature when asked to describe what people in the occupation "actually do" than did other students.

From our findings in connection with the hypothesis of near and far goals we concluded that "going to college" may very well be a reasonable enough "occupational" goal for many high school students. The suggestion was made that the high school counselor, in order to reduce false starts in college, might concentrate on teaching the college-bound student the duties and disciplines which will be demanded of him by his college rather than devoting much attention to the duties which will be demanded of the student by his tentatively chosen occupation.

After exploring the hypothesis of near and far goals, we returned to the analysis of predictor variables together with the criterion variable of specificity of knowledge about duties, this time controlling the analyses for curriculum and occupational choice. We found then that none of the predictor variables showed a significant relation with knowledge about duties.

In respect to our central question about the efficacy of guidance counseling, this chapter has produced a significant finding between one measure of counseling availability (of two tried) and one criterion measure (of three tried); namely, a significant relation was found between visiting the counselor and the exactness of the student's knowledge of the education required to enter his chosen occupation. The qualification must immediately be added, however, that this relation did not appear until visiting the counselor was combined with the variable of activity on the part of teachers in gathering information about students. That is, both visiting the counselor and being in a school where teachers were actively supporting guidance efforts were required to show a significant heightening of the students' knowledge about educational requirements of the occupation.

This chapter has provided some encouragement for the high school counselor and at the same time has offered some important qualifications and cautions. The next chapter will have a similar tone.

CHAPTER V

EFFECTS ON STUDENTS: APPROPRIATENESS OF CURRICULUM AND OCCUPATIONAL CHOICE

This chapter will continue to focus upon the counselor-student ratio in the school and upon visiting the counselor as conditions which should, presumably, have effects of one kind or another on students. In the last chapter we looked into the data to see whether these two predictor variables were associated with certain kinds of knowledge students had concerning their chosen occupations. In this chapter we shall look to see whether the predictor variables were associated with enrollment by "able" students in college-preparatory curricula or with appropriateness of curriculum and occupational choice. "Appropriateness" will be examined first in respect to the match between curriculum and occupation, and second, in respect to the match between the abilities called for by the occupation and the student's abilities as estimated by the tests of the Illinois Statewide High School Testing Program. Let us turn first to the question of placing students of high academic ability in the college-preparatory curriculum.

Placing High-Aptitude Students in the College-Preparatory Curriculum

One hears a great deal nowadays about the "search for talent" and the putative urgency for every "able" student to continue his formal education through the college years. The fact is widely deplored that a considerable fraction of students whose academic ability is very likely sufficient to win them a bachelor's degree do not go on to college. School people are frequently urged to bend every effort toward sending on to college every student who seems to have a reasonable chance of "succeeding" there.

In this section we shall look for evidence that the counselors in the schools we studied were having an effect on increasing the proportion of "able" students who were preparing themselves for college entrance. This is not to imply that I wish to align myself with those who view the matter so simply that they believe any student of "college ability" to be "wasted" who does not go on to college. My own belief is that possession of an aptitude does not imply that the possessor is obligated to develop and exploit that particular ability to its limit, either for his own good or for the good of his society. Every one of us possesses more than one aptitude, and not all of them can be exploited. Most of us must bring one or two of our abilities to fullest flower while leaving many others to remain hardly beyond the bud. An hour one spends augmenting his academic skills is an hour he spends slighting his artistic propensities, his social skills, or the talents of his fingers.

In each era and in each society some talents are prized more than others. In our own era, our society prizes skills with things. Our culture heroes are the engineers who invent and design things, the manufacturers who make things, and the businessmen who urge things upon us in ever more intoxicating plenitude. Scientists strike us as nice people as long as they keep close to the role of side-kicks of the engineers. Our most admired physicians are those surgeons who are handiest with one's internal plumbing. In the field of human relations, our admiration seems to go to those who treat even other humans as things: to the factory manager who cleverly arranges working conditions so that production increases; to the union boss or the politician who bends an uncritical mass to his leadership; to the personnel manager who, as he may aptly put it, efficiently fits the round pegs into the round holes and the square pegs into the square holes. And our musicians, painters, and other artists, who are notorious for being bored by mere things, are acceptable to us if they will let us treat them as things. If they do not try to instruct us but limit themselves to entertaining us, we pay them handsomely. But they must submit to being turned on and off like a television set; they must submit to being treated, as Kim Novak said in explanation of the suicide of her fellow actress Marilyn Monroe, as "a piece of meat."

I would align myself with those who deplore this one-sided manipulative view of life and who feel that our society's present conception of man is badly out of kilter. Our definitions and values about achievement must be challenged and renewed; we must learn to cherish more characteristics of people than their ability to manipulate things and people. We must learn to prize excellence in the home as well as on the job, responsibility in conversation as well as in the voting booth, generosity to our neighbors as well as to victims of an earthquake in Chile, miracles in marble as well as miracles in manufacturing.

But this is hardly the place for an essay on visions of a new society. However the visions of the reader may disagree with my own, the one thing we can agree on is that change, rapid change, is here to stay. Whatever is the list of values best suited to coping with change in the sense of helping us to become masters of it instead of victims, it is certainly a list which will be differently ordered from the list with which we have been trying to manage during the past few decades. The new values, certainly, must allow new social processes to be built quickly. We must be sensitive to new proposals, and for this our tastes in the coloring of ideas must change. We must no longer react with shock and outrage when the color of a new idea shatters the monochromatism of the accustomed scene; we must learn to cherish diversity and to admire the inventiveness of the social artist who offers us a new palette.

Moreover, our welcome to the new must go beyond the opinions people express and the recommendations they make; it must include also the manner in which people conduct their lives. Ideas are given to society not only in print and from the lectern but also by deed and example, by the venture of the lonely pioneer and by the intractability of the defiant rebel. A new idea sometimes loses its power to inspire if it must be expressed within the confines of existing customs and institutions. Not even the institution of formal education, though it produces from its campuses many of the most seminal ideas of our society, can be supposed unquestioningly to be the best forcing bed for every kind of innovation. Every institution must inevitably take on form and custom, and this form and custom must inevitably put boundaries on the life of the intellect and the spirit. This is as true of our universities as it is true of other institutions. Our universities serve admirably to develop certain kinds of intellectual competence and to encourage certain kinds of originality; they do not nourish, nor even smile upon, all the creative ways of thinking and doing which our society will require.

In brief, I do not visualize the ideal state as one in which every student above a given percentile in academic aptitude goes on to graduate from college. Instead of seeking merely to maximize college attendance among "able" students, I should prefer to maximize our knowledge of the diverse abilities of humankind and our knowledge of the kinds of abilities colleges are best at fostering; then I should prefer to try to match the particular kind of potential within the individual to the particular kind of fertilization an institution can provide. What we now know as "academic ability" is not the only kind of ability, not even the only kind of intellectual ability. If we are to foster and sustain the variegated repertoire of human capabilities which our society needs, we must not be over-ready to thrust every admirable student into our admirable institutions. The task is more complex than this.

Be the views of author and reader what they may, there are certainly many who believe that every student high in academic aptitude should be got into college; and it is this belief which gives us our purpose in this section. Let us turn now to the data to seek evidence on whether the counselors in the schools of our sample were augmenting, to any measurable degree, the tendency for students of high academic ability to be found in the college-preparatory curriculum.*

If counselors were exerting any important influence on students of high academic aptitude to pursue the college-preparatory curriculum, then we should expect to find a greater proportion of high-aptitude students in college-preparatory curricula when we look at schools with high counselor-student ratios than when we look at schools with lower counselor-student ratios. To repeat, we have no way of knowing how many counselors were in fact trying to get every high-aptitude student into the college-preparatory curriculum. The question is interesting, nevertheless, whether the presence of counselors does, overall, tend to result in more frequent enrollment in college-preparatory curricula by high-ability students. We now turn, in Table V-1, to a test of this possible effect of counselor-student ratio.

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* This topic was briefly touched upon in connection with Table III-15 but without detail in regard to our predictor variables.

Table V-1 shows, in agreement with Table III-15, that the high-DAT students were predominantly to be found in college-preparatory curricula and, further, that this relation was highly significant in all three ranges of counselor-student ratio. Our chief question, however, is whether the relation was stronger where the counselor-student ratio was higher. A first glance is encouraging; the chi-square value was highest for the schools of highest counselor-student ratios and lowest for those of the lowest ratios. The chi-square value, however, is not a very good measure of strength of relation since it has no sensitivity to the direction of the relation; an index was wanted for which having the larger proportion of students in the college-preparatory curriculum could be defined as the positive direction and for which larger proportions in the other curricula would lower the index. Smith's (1956) monotonicity index answers these specifications, and values of this index are shown in the last column of the table. These values, also, descended as the hypothesis demanded.

What we need next is a way of estimating the likelihood that the differences in strength of relation between the sub-tables of Table V-1 occurred by chance. The chance hypothesis was tested in two ways.

Table V-1. Percentages of Students Within Indicated Levels of Academic Aptitude Who Were Enrolled in Indicated Curricula, Shown Separately for Groups of Schools Having Indiqated Counselor-Student Ratios (students in mixed or uncertain curricula omitted).

	Curriculum						
Academic aptitude	Vocational	Commercial	Coll. prep.	Total	N	Chi-square and P	Index of strength of relation*
	Couns.-stud. ratios .00323 to .00794						
High DAT	7	9	84	100	114		
Middle and low DAT	35	24	41	100	135		
	22	17	61	100	249	46.88 P < .001	.44
	Couns.-stud. ratios .00168 to .00322						
High DAT	12	9	79	100	66		
Middle and low DAT	37	19	44	100	122		
	28	16	56	100	188	21.71 P < .001	.36
	Couns.-stud. ratios zero to .00167						
High DAT	16	15	69	100	62		
Middle and low DAT	36	25	39	100	104		
	28	21	51	100	166	15.08 P < .001	.31
			Total chi-square 6 df,			83.67 P < .001	

* Smith's monotonicity index. See J. E. Keith Smith (1956).

Smith, J. E. Keith. *On the Analysis of Contingency Tables with Ordered Classifications*. Lexington, Mass.: Lincoln Laboratory, Massachusetts Institute of Technology, 1956.

The first way of testing the chance hypothesis employed Bartlett's* test of "second-order interaction." This is a test of whether the direction of relation in one contingency table is the same as the direction of relation in another table. However, the test is applicable only to data arrayed in two 2 x 2 tables. For this purpose, then, the data of Table V-1 were collapsed as shown in Table V-2, where we see that the chi-square value from Bartlett's test was not significant. That is, we cannot reject the chance hypothesis; there is no evidence in Table V-2 that schools of high counselor-student ratio had any larger proportion of high-DAT students in the college-preparatory curriculum than did schools of lower counselor-student ratios.*

The second way of testing the chance hypothesis allowed us to keep the categories of the data spread out as in Table V-1 but necessitated a re-statement of the hypothesis. To wit, if the relations shown in Table V-1 were different in the several ranges of counselor-student ratio, then we should be able to predict, better than chance, the counselor-student ratio of the school in which students were found by noting what proportion

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* See Snedecor (1946, pp. 200-204.)

Snedecor, George W. Statistical Methods Applied to Experiments in Agriculture and Biology. (4th ed.) Ames: Iowa State College Press, 1946.

*Bartlett's test was applied also to the extreme data in Table V-2. That is, only those students who were in schools with the low counselor-student ratios of zero to .00167 and those in schools with the high ratios of .00323 to .00794 were included, the intermediate ratios omitted; and the test was applied to the difference between the relations occurring in each of these two extreme groups. Again, the result was not significant.

Table V-2. Table V-1 Collapsed to Two 2 x 2 Sub-Tables for Bartlett's Test of Second-Order Interaction.

Academic aptitude	Curriculum Voc'l or commer'l	 Coll. prep.	Total	N
Couns.-stud. ratios .00323 to .00794				
High DAT	16	84	100	114
Middle and low DAT	59	41	100	135
	39	61	100	249
Couns.-stud. ratios zero to .00322				
High DAT	26	74	100	128
Middle and low DAT	58	42	100	226
	46	54	100	354

Chi-square from Bartlett's test is 2.05; difference between the relations in the two sub-tables is not significant.

of the high-DAT students among them were enrolled in the college-preparatory curriculum. In other words, if we categorize students simultaneously by academic aptitude and curriculum, then the high-DAT-college-preparatory students should have been found disproportionally more often in schools with high counselor-student ratios. The data of Table V-1 are rearranged for the purposes of this second test in Table V-3. But the chi-square value computed from Table V-3 was not significant. The trend was slightly in the predicted direction: 50 percent of the high-DAT-college-preparatory students were in schools of high counselor-student ratio compared to a base rate of 41 percent, while only 23 percent of them were in schools of low ratio compared to a base rate of 28 percent. Nevertheless, the disproportionalities in the table were not so great that the chance hypothesis could be rejected at our customary .05 level of confidence.

Since faculty norms are often seen to have different effects on females as a group than upon males as a group, and since there was a slight trend in the predicted direction in Table V-3, it seemed worth while to repeat the analysis of Table V-3, but separating males from females. Doing this gives us Table V-4. Here we see that when the data are controlled for sex the trend shows up more strongly and, in fact, rises to a significance level reaching just past the .05 criterion for females and also just past the .05 criterion for the table as a whole. The relation among males, by themselves, fails to reach an acceptable level of significance.

Upon finding that the predicted trend was magnified sufficiently to touch significance by looking within each sex separately in the manner of Table V-4, we went back to the plan of Table V-2 and computed Bartlett's test for each sex. This procedure, however, failed to produce any significant result.

Table V-3. Percentages of Students in Categories of (a) Academic Aptitude Level, Crossed with (b) Curriculum, Who Were Found in Schools Having Indicated Counselor-Student Ratios (students in mixed or uncertain curricula omitted).

	Counselor-student ratio				
	Zero to .00167	.00168 to .00322	.00323 to .00794	Total	N
High DAT:					
College preparatory	23	27	50	100	191
Business or commerce	36	24	40	100	25
Vocational	38	31	31	100	26
Middle and low DAT:					
College preparatory	27	36	37	100	151
Business or commerce	32	28	40	100	81
Vocational	29	35	36	100	129
Total	28	31	41	100	
N	166	188	249		603

Chi-square when expected values are computed from marginal frequencies at right and bottom is 11.21, which is not significant for 10 df. For method of computation, see Mitra (1955, p. 64, formula for $H_{1.23}$).

Table V-4. Percentages of Students in Categories of (a) Academic Aptitude Level, Crossed with (b) Curriculum, Who Were Found in Schools Having Indicated Counselor-Student Ratios, Shown Separately for Males and Females (students in mixed or uncertain curricula omitted).

Males only	Counselor-student ratio				
	Zero to .00167	.00168 to .00322	.00323 to .00794	Total	N
High DAT:					
College preparatory	21	31	48	100	91
Commerce and vocational*	37	33	30	100	27
Middle and low DAT:					
College preparatory	35	25	40	100	75
Commerce and vocational*	31	35	34	100	126
Total	30	31	39	100	
N	94	100	125		319

chi-square = 9.27, 6 df, NS

Females only	Counselor-student ratio				
	Zero to .00167	.00168 to .00322	.00323 to .00794	Total	N
High DAT:					
College preparatory	24	24	*52*	100	99
Commerce and vocational*	*37*	21	*42*	100	24
Middle and low DAT:					
College preparatory	20	*45*	35	100	75
Commerce and vocational*	*29*	*29*	42	100	84
Total	26	31	43	100	
N	72	87	123		282

chi-square = 13.59, 6 df, P < .05

Total chi-square = 22.68, 12 df, P < .05

* Business or commercial combined with vocational because of the paucity of cases in one or the other.

As well as examining the proportions of high-DAT students in the college-preparatory curriculum to be found in the different strata of counselor-student ratio, we also performed the corresponding tests to seek differences between students who had visited a counselor, on the one hand, and students who had not, on the other. Only a very slight trend in the predicted direction again appeared,* and none of the tests performed with visiting a counselor gave a significant result.

It would have been interesting to carry this analysis further by adding another variable to Table V-4 -- information-seeking by teachers, for example. Unfortunately, some of the categories in Table V-4 have so few cases (note an N of 27 in one line and 24 in another) that breaking them into more categories would have left too few cases for a reliable test. Table V-4 is as far as we could go.

It cannot be denied that Table V-4 gives some support to the hypothesis that we are likely to find a greater proportion of students (or at least of female students) of high academic ability enrolled in college-preparatory curricula if we look in schools of higher counselor-student ratio rather than in schools of lower. Nevertheless, it would seem wise not to put much confidence in the result. The encouragement given us by the .05 significance level in Table V-4 is diminished by the following facts. First, Bartlett's test of the same data (also separated by sex) failed to show a significant result. Second, the corresponding (and just as reasonable) hypothesis using visiting the counselor instead of counselor-student ratio failed to receive support from either of the two types of test whether applied to the sexes separately or pooled. Lastly, the analysis of Table V-4 did not show significance among males; in fact, the disproportionalities in the male section of the table do not even show the same kind of trend as do the data for females. This last point must especially disconcert those who argue that "high ability" students should be guided into college in greater numbers for the reason of conserving manpower. For if the findings of Table V-4 can be relied upon at all, they argue that counselors are succeeding somewhat in encouraging girls of high academic ability to prepare for college, but that they are not succeeding with boys. Yet the boys as a group will spend many more days of their lives in the working force than will the girls. Of course, this point need not be disappointing to those who believe that a college education can help women in their own ways to contribute more effectively to the total life of the society.

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* Eighty-two percent of high-DAT students were in a college-preparatory curriculum among students who had visited a counselor compared to a base rate of students in college-preparatory curricula of 59 percent, while 73 percent of high-DAT students were in a college-preparatory curriculum among students who had not visited a counselor compared to a base rate of 52 percent. Smith's monotonicity index was .40 among students who had visited a counselor and a little less than that (namely .35) among those who had not.

All in all, the results of this section seem very weak support indeed for the proposition that counselors in Illinois were being effective in guiding more students of high academic aptitude into preparation for college than would otherwise be heading in that direction. Whether the weakness of this result should give us pleasure or chagrin depends on our values, upon further knowledge we might obtain about the characteristics of the students enrolled (or not enrolled) in college-preparatory curricula, and upon other factors. I betrayed some of my own biases about this complicated question at the opening of this section, and I shall not reiterate them here.

Appropriateness of Curriculum to Occupational Choice

One of the widely accepted duties of guidance counselors is helping students to select those subjects in high school which will be the best preparation for whatever they intend in the way of higher education or future occupation. Accordingly, our next criterion will be the appropriateness of the student's curriculum to his chosen occupation. In determining this appropriateness, two judges were employed, both of whom had graduate training in guidance. Transcripts for as many as possible of the students in our sample were obtained from the high schools; and the two judges, working independently, inspected each student's curriculum (to the second semester of the junior year) and judged its appropriateness to the student's first choice of occupation. Three categories were used: appropriate, doubtful, and inappropriate. After independent coding, the judges compared their judgments and revised any judgments upon which they had disagreed. Disagreements were minor and infrequent. Details of the judges' procedures will be found in Appendix V-B.

Judgments of appropriateness were not made against the name of a curriculum merely. Judgments were made on the basis of the actual distribution of courses and the grades obtained in them. It was entirely possible, for example, for the individual curriculum pattern of one aspiring physicist in the college-preparatory curriculum to be judged appropriate and for that of another to be judged inappropriate. Overall, 52 percent of students had pursued courses of study which were judged appropriate to their first choice of occupation. The distribution of appropriate matches between individual curricula and occupational choice is shown in Tables V-5 and 6, where the percentages of appropriate matches

Table V-5. Females Only: Percentages of Students Choosing Indicated Classes of Occupation Whose Curricula Were Judged Appropriate to Their Occupational Choices, Shown Separately by Curriculum in Which Student Was Enrolled (girls choosing housewife and 12 girls in vocational curricula omitted).

	Appropriateness					
First-choice occupation	No or doubtful	Yes	Total	N	Chi-square	P
	College-preparatory curricula*					
Teaching	18	82	100	62		
Science, medicine	22	78	100	36		
Other prof. and sub-prof.	35	65	100	46		
Secretary	41	59	100	22		
	27	73	100	166	6.50	<.10
	Commercial curricula					
Secretary	21	79	100	61		
Other	58	42	100	24		
	32	68	100	85	9.25	<.01
	Mixed or uncertain curricula					
Secretary	43	57	100	101		
Skilled	43	57	100	28		
Science, medicine, other prof. and sub-prof.	58	42	100	55		
Teaching	64	36	100	28		
	50	50	100	212	6.62	<.10

* 3 girls choosing skilled occupations omitted.

Table V-6. Males Only: Percentages of Students Choosing Indicated Classes of Occupation Whose Curricula Were Judged Appropriate to Their Occupational Choices, Shown Separately by Curriculum in Which Student Was Enrolled (13 boys in commercial curricula omitted).

First-choice occupation	Appropriateness No or doubtful	 Yes	Total	N	Chi-square	P
	College-preparatory curricula*					
Teaching	39	61	100	18		
Science, medicine	49	51	100	72		
Other prof. and sub-prof.	58	42	100	43		
Skilled	91	9	100	22		
	56	44	100	155	15.93	<.005
	Vocational curricula**					
Skilled	36	64	100	78		
Other prof. and sub-prof.	74	26	100	27		
Science, medicine, teaching	84	16	100	19		
	52	48	100	124	20.33	<.001
	Mixed or uncertain curricula***					
Skilled	34	66	100	32		
Other prof. and sub-prof.	62	38	100	29		
Science, medicine, teaching	64	36	100	28		
	53	47	100	89	7.15	<.05

* 5 boys choosing sales and one vague omitted.
** 2 boys choosing sales and 3 vague omitted.
*** 5 boys choosing sales and 1 vague omitted.

are shown within categories of curriculum and within classes of occupations chosen. (For a fuller explanation of the classes of occupations, see Table IV-18.) Percentages of matches between curriculum and occupation judged to be appropriate ranged from 82 (for females in college-preparatory curricula intending to teach) to nine (for males in college-preparatory curricula naming one of the skilled trades as their occupational goal).

Within each of the curriculum categories which sub-divide Tables V-5 and 6, the relation between occupational choice and appropriateness of the choice to the individual curriculum pattern approaches or surpasses the .05 significance level. This result, of course, is in no way remarkable. For example, even though it is possible (and did occur in a number of instances) that an individual's curriculum pattern would be best classified as college preparatory without being judged appropriate to the particular occupation of engineer, it is certainly likely that the curricular patterns of individuals classifiable as college preparatory would contain more patterns suitable to an engineering career than would curricular patterns classified as commercial or vocational. The two variables are not "experimentally independent;" that is, the several curricula are built to be more appropriate to some future occupations than others, and the relations showing up in Tables V-5 and 6 are to a considerable extent a foregone conclusion. The proportions of appropriate curricular patterns in the tables which are the more interesting are those which deviate from this expected relation. As with the question of who among the academically able should go to college, however, arguments can be put forward on both sides of the question whether occupational choices and curriculum should always be maximally appropriate to each other.

The distributions of appropriateness of choice within the two sexes also were compared. Sixty-one percent of females were judged to be in curricula appropriate to their occupational choices, but only 41 percent of males, a difference significant (with 2 df) beyond the .001 level of confidence.

Finally, it should be mentioned that the general pattern of the relations among occupational choice, curriculum, and academic aptitude displayed in this section and the previous are supported by the results obtained from a national sample of students by Stice, Mollenkopf, and Torgerson (1956). They also furnish data connecting aspiration for college with geographic region, size of family, father's occupation, and other variables. Our distributions regarding occupational choice (see also App. IV-C) agree also with the findings of Powell and Bloom (1962), as does the general pattern of our findings concerning students' perceptions of influences on them in Chapter VII.

Let me next insert a note about the extent of agreement between the judges and the student himself about the proper designation of the student's curriculum. (The standards used by the judges were given in Appendix III-A, and the student's designation of his curriculum was taken from item 1 of Appendix II-A.) As can be seen in Table V-7, disagreement

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Stice, Glen; Mollenkopf, William G.; and Torgerson, Warren S. *Background Factors and College-Going Plans Among High-Aptitude Public High School Seniors*. Princeton, New Jersey: Educational Testing Service, 1956 (August).

Powell, Marvin and Bloom, Viola. Development of and reasons for vocational choices of adolescents through the high-school years. *J. educ. Res.*, 1962, 56, 126-133.

Table V-7. Percentages of Students Judged after Inspection of Transcripts to be in Indicated Curricula Who Reported Their Curricula on Questionnaires to be as Indicated.

	Student's designation					
Judges' designation of curriculum	Mixed or unc.	Voc-'n'l	Com-'rce	Coll. prep.	Total	N
College preparatory	1	5	6	88	100	337
Commercial	3	9	73	15	100	108
Vocational	3	67	12	18	100	145
Mixed or uncertain	5	23	42	30	100	309
	3	22	27	48	100	889

between the student and the trained judges tended to go in two directions; first, students judged to be in commercial or vocational curricula often claimed to be in college-preparatory curricula (15 and 18 percent respectively), and second, students judged to be in mixed or uncertain curricula often claimed to be in one of the specified curricula (23 percent of these claimed to be in vocational, 42 percent in commercial, and 30 percent in college-preparatory curricula). This latter tendency may have been due to the fact that the item in the students' questionnaire offered only the three specific categories; students were coded as giving mixed or uncertain answers if they marked more than one choice or wrote in appropriate explanations.

Looking at Table V-7 another way, we see that 67 percent of students judged to be in vocational curricula agreed with the judges, 73 percent of students to be in commercial curricula agreed, and 88 percent judged college preparatory agreed. Whether these percentages should be considered encouragingly high or discouragingly low depends on the reader's purposes and values; it would seem inappropriate to discuss all the various possibilities here.

Be all this as it may, the students' designations of their curricula were not used in this report; we used the categories given by the judges from transcripts. Let us return now to consider the criterion variable of appropriateness between the curriculum of the student (assessed from individual transcripts) and his occupational choice.

Effects of Counseling

Our search for evidence that appropriateness of curriculum to occupational choice was associated with activities of guidance counselors was to go unrewarded. Appropriateness was found not to be significantly related to counselor-student ratio in the school (4 df), to visiting the counselor (2 df), to information-seeking by teachers (2 df), or to talking with teachers or counselors about test results (4 df). Many other relations were tested for significance, but very few reached the acceptable level. For example, with academic aptitude controlled, we tested whether appropriateness of curriculum to occupation could be significantly predicted from categories of visiting the counselor crossed with categories of information-seeking by teachers (6 df). Again holding academic aptitude controlled, we tested appropriateness against categories of visiting the counselor crossed with categories of talking about test results (6 df). Still again, we tested appropriateness against crossed categories of information-seeking and discussing test results (6 df). None of these relations approached an acceptable level of significance. Other relations tested can be found in Appendix V-A.

We delved deeper. Each student had been asked to state not only his first occupational choice but also his second. The judges rated the appropriateness of the student's curriculum to his second choice also; and an over-all appropriateness rating was assigned each student which gave credit, so to speak, for the appropriateness of the curriculum to either first or second occupational choice. The findings using this combined rating are listed in Appendix V-A. They brought no new result.

Relations with Academic Aptitude

The only variable which showed any persistent and meaningful relation to the appropriateness of the student's curriculum to his occupational choice was academic aptitude. This is not surprising. Throughout this chapter and the previous one, we have seen that academic aptitude was associated in reasonable ways with each of the criterion variables. The recurrence of such a relation here gives us reasonable confidence that the appropriateness categorizations had some reliability, that they were not merely random. Furthermore, the relation between academic aptitude and appropriateness was significant within all but one of the types of curriculum. These results are shown in Table V-8.

In summary, the expected association appeared between academic aptitude and the appropriateness of the student's curriculum to his occupational choice; but no other significant relation was found. The relation with academic aptitude was not due to the fact that relatively more students of high academic aptitude were to be found in the college-preparatory curricula since the relation between appropriateness and academic aptitude was tested within each of the curriculum categories.

The lack of any relation with any variable other than academic aptitude should be straightforwardly interpreted to mean that there was no evidence to support the hypothesis that guidance activities in Illinois high schools in 1959 had an influence on the matches students made between their curricula and their occupational choices. The search for significant relations with counselor-student ratio and with visiting the counselor was carried out with controls on academic aptitude, sex, and other variables, and the dearth of significant results seems good reason to urge further study of the degree of effectiveness of guidance as it is now carried out in our schools, as well as further study of the conditions under which present-day guidance is most effective and of types of guidance which can be most effective under present-day conditions. This recommendation rests also on the lack of significant findings in connection with some of the other criterion variables which were discussed in Chapter IV.

Table V-8. Percentages of Students Within Indicated Levels of Academic Aptitude Whose Curricula Were Judged Appropriate to Their Occupational Choices, Shown Separately by Curriculum in Which the Student Was Enrolled.

Academic aptitude	Appropriateness No or doubtful	Yes	Total	N	Chi-square	P
	College-preparatory curricula					
High DAT	26	74	100	187		
Middle DAT	56	43	100	95		
Low DAT	65	35	100	48		
	41	59	100	330	38.49	<.001
	Commercial curricula					
High DAT	17	83	100	24		
Middle DAT	33	67	100	39		
Low DAT	51	49	100	35		
	36	64	100	98	9.12	<.02
	Vocational curricula					
High DAT	55	45	100	22		
Middle DAT	51	49	100	51		
Low DAT	49	51	100	69		
	51	49	100	142	0.24	NS
	Mixed and uncertain curricula					
High DAT	40	60	100	62		
Middle DAT	54	46	100	109		
Low DAT	69	31	100	136		
	58	42	100	307	15.41	<.001
8 df, total chi-square					63.25	<.001

This is not to say, of course, that our data contain merely a monotonous lack of evidence for the effectiveness of present-day guidance counseling. We saw in Chapter IV some very reasonable evidence that visiting the counselor, when done in schools where the teachers participated in the guidance activity, was associated with increased frequency of exact knowledge about the education required for the student's chosen occupation. And we shall find some encouraging results in this chapter also. However, the evidence occurring here and there in our data in favor of the effectiveness of guidance counseling should not be taken to mean that all is well after all. On the contrary, the fact that we turned up favorable evidence here and there from among a great many luckless forays gives all the more reason for undertaking further research to ferret out with much more precision the conditions which catalyze effective counseling. Our occasional bits of positive evidence encourage the belief that effective guidance counseling is not a vain fancy nor a hope for the future only, but that it does exist today under appropriate conditions -- conditions, however, of which we have as yet only hints.

Appropriateness of Occupational Choice to Scores on Tests of the Illinois Statewide High School Testing Program

We have now come to our final criterion variable. This variable is one which should give us some perspective on the use of tests in guidance. It is a widely accepted duty of guidance counselors to persuade students to choose occupations consonant with their abilities, and it is also widely urged that counselors make use of standardized tests as an aid in ascertaining the abilities of the student. Our sample of students, as explained in Chapter II, was drawn from schools subscribing to the SWTP;

and presumably the tests of the Program were among those used by the guidance counselors in those schools. If other tests were used instead, presumably the findings of other tests built for purposes similar to those of the SWTP would give assessments of the students which would usually agree with those of the SWTP. Assuming that tests were used as aids in guidance concerned with occupational choice, then, the efforts of the counselors might reasonably be expected to show up in the form of a larger proportion of students making occupational choices appropriate to their abilities as delineated by the tests of the SWTP.

Two trained judges (the same two who categorized the curricula of the students; see Chapter III) inspected each student's test scores and judged the appropriateness of his test profile to his occupational goal. They coded their judgments into three categories: appropriate, doubtful, and inappropriate. The details of the judging process are described in Appendix IV-D.

The following quotations from a recent announcement of the SWTP will serve to describe the test battery.

"The Program tests yield eight scores:

Academic Aptitudes--
1. Abstract reasoning
2. Verbal reasoning
3. Total

Basic-Skills Achievement--
4. Natural science reading comprehension
5. Social science reading comprehension
6. Writing skills achievement
7. Conventional writing errors
8. Functional writing errors

"As measures of academic aptitude we use the Abstract Reasoning and Verbal Reasoning Tests from the _Differential Aptitude Tests_ battery published by The Psychological Corporation....

"The Natural Science Reading Comprehension Test samples the student's comprehension of four reading passages at several levels. For instance, at the most basic level it measures the student's understanding of the meaning of key words in the passage and his ability to read graphs. It also checks on his sensitivity to the particular meaning of words in context. At a higher level of understanding it tests his ability to recognize a correct restatement of phrases or sentences. At the next level it tests his ability to recognize certain implications of the passage. Finally, it tests his ability to understand well enough the rules and principles described to apply them correctly to new situations.

"The Social Science Reading Comprehension Test calls upon the following abilities: (a) ability to determine the main idea, (b) ability to make reasonable inferences about the author's intent, (c) ability to recognize the general form of argument, (d) ability to recognize relevant assumptions, (e) ability to discriminate between appropriate and inappropriate implications of an article, and (f) skills in comparing and contrasting two or more articles which express different points of view. The test developed around these objectives consists of two passages with different points of view on the same topic. It is designed to sample all of these behaviors broadly rather than to measure one or two of them intensively. We feel sure you will find this test useful.

"In the Test of Writing Skills the student is presented with a composition which contains several alternative ways of writing certain portions. He is required to select the alternative which he believes will afford the best writing. The passage is given first to the student without test items so that he may glance through it quickly and judge the kind of writing appropriate to the author's intent and style. Then the same passage is presented with alternatives from which he is to choose."

The proportions of students whose occupational choices were judged appropriate to those of their abilities which were assessed by the SWTP* are shown in Tables V-9 and 10. These tables are sub-divided by curriculum category and by class of occupation. (For a fuller explanation of class of occupation, see Table IV-18.) Percentages of occupational choices appropriate to the students' SWTP abilities, according to the judges, ranged from 74 percent (for females in college-preparatory

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* The phrase "those of their abilities which were assessed by the SWTP" will hereafter be shortened to "SWTP abilities."

Table V-9. Females Only: Percentages of Students Choosing Indicated Classes of Occupation Whose Choices Were Judged Appropriate to Their SWTP Abilities, Shown Separately by Curriculum in Which the Student Was Enrolled (girls choosing housewife and 12 girls in vocational curricula omitted).

First-choice occupation	Appropriateness No or doubtful	Yes	Total	N	Chi-square	P
	College-preparatory curricula*					
Teaching	26	74	100	62		
Other prof. and sub.-prof.	30	70	100	46		
Secretary	36	64	100	22		
Science, medicine	42	58	100	36		
	32	68	100	166	3.63	NS
	Commercial curricula					
Secretary	49	51	100	61		
Other	60	40	100	25		
	52	48	100	86	0.90	NS
	Mixed or uncertain curricula					
Teaching	43	57	100	28		
Skilled	46	54	100	28		
Science, medicine	52	48	100	31		
Other prof. and sub-prof.	58	42	100	24		
Secretary	67	33	100	100		
	58	42	100	211	7.52	NS

* 3 girls choosing skilled occupations omitted.

Table V-10. Males Only: Percentages of Students Choosing Indicated Classes of Occupation Whose Choices Were Judged Appropriate to Their SWTP Abilities, Shown Separately by Curriculum in Which the Student Was Enrolled (13 boys in commercial curricula omitted).

	Appropriateness					
First-choice occupation	No or doubtful	Yes	Total	N	Chi-square	P
	College-preparatory curricula*					
Science, medicine	37	63	100	72		
Teaching	39	61	100	18		
Other prof. and sub-prof.	53	47	100	43		
Skilled	64	36	100	22		
	46	54	100	155	6.04	NS
	Vocational curricula**					
Skilled	51	49	100	78		
Other prof. and sub-prof.	67	33	100	27		
Science, medicine, teaching	68	32	100	19		
	57	43	100	124	3.51	NS
	Mixed or uncertain curricula***					
Skilled	41	59	100	32		
Science, medicine, teaching	54	46	100	28		
Other prof. and sub-prof.	59	41	100	29		
	51	49	100	89	1.87	NS

* 5 boys choosing sales and one vague omitted.
** 2 boys choosing sales and 3 vague omitted.
*** 5 boys choosing sales and one vague omitted.

curricula intending to teach) to 32 percent (for males in vocational curricula choosing occupations in science, medicine, or teaching). There is to be seen in Tables V-9 and 10 no significant relation between occupational choice and the appropriateness of the choice to SWTP abilities. In other words, there was no evidence in our data that students choosing one class of occupation were choosing occupations any closer to their SWTP abilities than students choosing another class of occupation. This finding may disappoint those who believe that scientific and mathematical occupations should be receiving the very cream of the aptitude reservoir, but others will no doubt receive the news calmly.

A note of caution in reading Tables V-9 and 10 (and, in fact, in reading all the tables of this report) needs to be sounded. For example, we see in Table V-9, in the tabulation under mixed or uncertain curricula, that 43 percent of girls choosing teaching careers were judged to have SWTP abilities doubtful or inappropriate to teaching careers. This percentage looks large, but its interpretation should be tempered by the fact that it is based only on 28 students and is therefore not a very reliable figure. As the size of "N" becomes smaller, the accuracy of the percentage becomes more dubious.

Relations with Academic Aptitude

We shall find that appropriateness of occupational choice to SWTP abilities was related to certain of the variables which have been of chief interest in this chapter. Before turning to the usual predictor variables, however, let us recall that academic aptitude has been found to be related to most of our criterion variables, including those that were related to nothing else. Since the variable of academic aptitude is always of interest, let us see before going further in what manner academic aptitude was associated with the appropriateness of occupational choice to SWTP abilities.

Table V-11 shows, within curriculum categories, the relation between academic aptitude and appropriateness. The relation tested out at high statistical significance. However, the relation was not wholly one between operationally independent events since the DAT score was one of the criteria used in judging appropriateness. For example, according to the rules the judges adopted, only students naming unskilled occupations could receive an "appropriate" rating while having DAT percentiles lower than 30 (see judging standards given in Appendix IV-D). Since the "low DAT" category had its upper limit at about the 36th percentile (see Table III-11), very few students other than those choosing unskilled occupations (who in turn were so few that they were classified along with "vague" in Appendix IV-C) could be rated as "appropriate" if they were in the "low DAT" category.

The chief usefulness of Table V-11 is to show two things. First, the students we studied, in the mass, tended to claim occupational goals which were beyond their abilities. Regardless of academic ability, only 62 percent of the choices of college-preparatory students were judged appropriate, 42 percent of the choices of commercial students, 26 percent of the vocational, and 34 percent of those in mixed or uncertain curricula. No doubt some of the discrepancy, far from being deeply ego-involved over-aspiration, was merely the "social desirability" effect -- that is, the tendency of the respondent to write an occupational name on the questionnaire which he felt was a respectable answer to give. Yet "social desirability" motivation deserves serious consideration since the same kind of tendency may very well occur when the student talks to the counselor.

Table V-11. Percentages of Students Within Indicated Levels of Academic Aptitude Whose Occupational Choices Were Judged Appropriate to Their SWTP Abilities, Shown Separately by Curriculum in Which the Student Was Enrolled (girls choosing housewife omitted).

Academic aptitude	Appropriateness: No or doubtful	Appropriateness: Yes	Total	N	Chi-square	P
	College-preparatory curricula					
High DAT	12	88	100	187		
Middle DAT	61	39	100	95		
Low DAT	98	2	100	48		
	38	62	100	330	150.74	<.001
	Commercial curricula					
High DAT	8	92	100	24		
Middle DAT	54	46	100	39		
Low DAT	94	6	100	36		
	58	42	100	99	21.57	<.001
	Vocational curricula					
High DAT	35	64	100	22		
Middle DAT	67	33	100	52		
Low DAT	91	9	100	69		
	74	26	100	143	19.02	<.001
	Mixed or uncertain curricula					
High DAT	11	89	100	62		
Middle DAT	56	44	100	109		
Low DAT	99	1	100	136		
	66	34	100	307	154.71	<.001
	Total 8 df, total chi-square				346.04	<.001

Over-aspiration is not the whole explanation, of course, for finding more appropriateness of occupation to SWTP abilities among the college-preparatory students as compared to students in other curricula. Another factor is evidenced by the fact that students in the college-preparatory curriculum reported with relatively more frequency that teachers or counselors discussed test results with them "sometimes" or "frequently," than did students in other curricula. Seventy-one percent of students in the college-preparatory curriculum gave this answer, 57 percent of students in the commercial curriculum did so, and 53 percent of the students in the vocational curriculum.

The second point of interest is that important percentages of students were judged to have named occupational choices which were inappropriate or doubtful even when they were in the middle and high DAT ranges. This indicates that, in the opinion of the judges, there were in many cases deficiencies in types of abilities other than general academic aptitude; namely, in writing skills, social science reading comprehension, or natural science reading comprehension. Unfortunately, we can furnish no data on the number of students who themselves may have been aware of the respects in which their abilities were sufficient or insufficient.

Relations with Predictor and Control Variables

Appropriateness of occupational choice to SWTP abilities showed no significant relation to visiting the counselor (2 df), and we pursued this latter predictor variable no further. Appropriateness did turn out to be significantly related, however, to counselor-student ratio(4 df, $P < .001$) and in the proper direction. Appropriateness also was found to be significant and properly related to information-seeking by teachers (2 df, $P < .001$) and to discussing test results with teacher or counselor (4 df, $P < .001$).

Some of these findings are tainted, of course. In particular, the simple relation between appropriateness and counselor-student ratio is certainly misleading since we know that the proportion of high-DAT students tended to be higher in schools of high counselor-student ratio than in schools of lower; and we know that DAT scores were artifactually associated with the ratings of appropriateness between occupational choice and SWTP abilities. No finding will be of interest unless it has been controlled for DAT score. However, since controlling for DAT will tend to restrict the range of appropriateness ratings, it will be all the more convincing when we find a relation between appropriateness and some other variable while controlling for DAT.

Counselor-student ratio. Looking again at appropriateness of occupational choice to SWTP abilities as distributed against counselor-student ratio, but this time with DAT controlled, we have the results of Table V-12, which shows that although the relation faded substantially to zero among students of middle and high DAT, the relation between appropriateness and counselor-student ratio among students of low DAT remained significant. But the pattern was odd; the highest percentage of inappropriate choices (96 percent) was found not in schools of lowest counselor-student ratio but in schools of intermediate ratios. Even though the figures for the intermediate and low ranges of counselor-student ratio may have differed only because of random variability, these results prompted us to look further.

Talking with teachers and information-seeking by teachers. Turning to the variable of talking with teacher or counselor about the results of standardized tests, we found that the relation with appropriateness was removed when controlled for academic aptitude (12 df). The

Table V-12. Percentages of Students in Schools of Indicated Counselor-Student Ratios Whose Occupational Choices Were Judged Appropriate to Their SWTP Abilities, Shown Separately for Three Levels of Academic Aptitude (girls choosing housewife omitted).

		Appropriateness*					
Academic apt.	Counselor-student ratio	No or doubtful	Yes	Total	N	Chi-square	P
High DAT	.00323 - .00794	14	86	100	148		
	.00168 - .00322	15	85	100	89		
	Zero - .00167	10	90	100	87		
		13	87	100	324	0.82	NS
		Appropriateness*					
		No	Doubtful or yes				
Middle DAT	.00323 - .00794	45	55	100	120		
	.00168 - .00322	41	59	100	104		
	Zero - .00167	40	60	100	103		
		42	58	100	327	0.51	NS
		Appropriateness*					
		No	Doubtful or yes				
Low DAT	.00323 - .00794	78	22	100	73		
	.00168 - .00322	96	4	100	110		
	Zero - .00167	90	10	100	131		
		89	11	100	314	14.01	<.05
				Total	6 df	14.01**	<.05

* Categorization of appropriateness ratings changes to accomodate the changing location of sparse cases, which in turn was due to the association between appropriateness and DAT. This latter relation can be seen more clearly in Table V-13.

**Since the disproportionalities in the subtables for high and middle DAT were not in the predicted direction, they were counted as zero when taking the sum for total chi-square.

relation of appropriateness with information-seeking by teachers, on the other hand, remained significant at the .05 level of confidence, at least among students of low academic ability. These results are shown in Table V-13.

The results so far remind us of the findings concerning the knowledge of the student concerning the education required in his chosen occupation which we recounted in Chapter IV. Such knowledge was associated, again within low DAT, with visiting the counselor and with information-seeking by teachers when categories of the two latter variables were combined. Similarly, we have now discovered evidence that counselor-student ratio and information-seeking were associated with appropriateness of occupational choice among low-DAT students. The similarity encourages us to look more deeply into interrelationships.

Combinations of two variables. Since the last two tables showed some promise of elucidating the conditions under which occupational choice might be more appropriate to SWTP abilities, and since the variables which made a difference (at least among students of low academic ability) were counselor-student ratio and information-seeking by teachers, let us look next at the results of using these two variables as multiple predictors of appropriateness. Crossing categories of counselor-student ratio with categories of information-seeking and comparing percentages of choices judged appropriate within these crossed categories, we have Table V-14.

The pattern of Table V-14 is what we should have expected. The greatest effect (in fact, the only significant effect) appears in the subtable for low DAT, and there we see that the high counselor-student ratio combined with the more frequent information-seeking by teachers yielded a proportion (24 percent) of not-inappropriate choices which was

Table V-13. Percentages of Students in Schools Where Teachers Spent Indicated Mean Hours per Semester Gathering Information About Students, Whose Occupational Choices Were Judged Appropriate to Their SWTP Abilities; Shown Separately for Three Levels of Academic Aptitude (girls choosing housewife omitted).

Academic apt.	Mean hours per semester spent by teachers in seeking info.	Appropriateness						
		No	Doubtful	Yes	Total	N	Chi-square	P
High DAT	13.50 - 28.49	2	10	88	100	172		
	3.00 - 13.49	7	7	86	100	152		
		4	9	87	100	324	3.86*	NS
Middle DAT	13.50 - 28.49	41	21	38	100	145		
	3.00 - 13.49	43	14	43	100	182		
		42	17	41	100	327	2.22	NS
Low DAT	13.50 - 28.49	84	12	4	100	115		
	3.00 - 13.49	93	5	2	100	199		
		90	7	3	100	314	6.55*	<.05
					Total	6 df	12.63	<.05

* Corrected for continuity.

Table V-14. Percentages of Students (a) in Categories of Schools with Indicated Counselor-Student Ratios, Crossed with (b) Categories of Schools in Which Teachers Spent Indicated Mean Hours per Semester Gathering Information About Students, Whose Occupational Choices Were Judged Appropriate to Their SWTP Abilities; Shown Separately for Three Levels of Academic Aptitude (girls choosing housewife omitted).

Aca-demic apt.	Counselor-student ratio	Mean hours per semester spent by teachers in seeking info.	Appropriateness			Total	N	Chi-square	P
			No or doubtful	Yes					
High DAT	.00323 - .00794	13.50 - 28.49	11	89		100	115		
		3.00 - 13.49	22	78		100	32		
	Zero - .00322	13.50 - 28.49	12	88		100	56		
		3.00 - 13.49	12	88		100	120		
			13	87		100	323	2.10	NS
			Appropriateness						
			No	Doubtful	Yes				
Middle DAT	.00323 - .00794	13.50 - 28.49	40	18	42	100	83		
		3.00 - 13.49	57	11	32	100	37		
	Zero - .00322	13.50 - 28.49	41	25	34	100	61		
		3.00 - 13.49	40	15	45	100	145		
			42	17	41	100	326	4.22	NS
			Appropriateness						
			No	Doubtful or yes					
Low DAT	.00323 - .00794	13.50 - 28.49	76	24		100	49		
		3.00 - 13.49	85	15		100	27		
	Zero - .00322	13.50 - 28.49	90	10		100	69		
		3.00 - 13.49	94	6		100	172		
			90	10		100	317	13.06	<.01
						Total	12 df	19.38	<.10

considerably above the base rate (10 percent); in contrast, the combination of low counselor-student ratio and infrequent information-seeking yielded a percentage (six) below the base rate. Our satisfaction is a little dampened, it is true, by the fact that a similar trend is impossible to discern among middle-DAT students and by the fact that the over-all chi-square for the table did not reach the .05 significance level. These disappointments would not be disappointments had we predicted in advance of our analysis that the relation would be found solely or more strongly in the low-DAT sub-table; but the fact is that the occurrence of the relation solely within the low-DAT condition was an ex post facto discovery. Consequently, we should have had more confidence in the result had it been reflected at least to some extent among the students of the mid-range of DAT. We shall hope that the pattern appearing in Table V-14 is to be substantiated by further findings.

Variables do not always interact with other variables in a combined relation to still further variables in the same way they act in a simple relation of one variable to another. Let us retrieve the variable of talking to teacher or counselor about test results, using this variable in combination with counselor-student ratio to predict appropriateness of occupational choice in respect to SWTP abilities. The results are given in Table V-15.

The results of Table V-15 are stronger than those of Table V-14. We see that not only were the results of Table V-15 significant over-all, but we see also that the strength of the relation rose from the high DAT condition to the low with the relation for middle DAT reaching close to the .05 level. But aside from our satisfaction in the general shape of the results, the chief point of interest here, as in Table V-14, is the

Table V-15. Percentages of Students (a) in Categories of Schools with Indicated Counselor-Student Ratios, Crossed with (b) Frequency of Talking with Teachers or Counselors About Standardized Test Results, Whose Occupational Choices Were Judged Appropriate to Their SWTP Abilities; Shown Separately for Three Levels of Academic Aptitude (girls choosing housewife omitted).

Academic apt.	Counselor-student ratio	Frequency of talking about test results	Appropriateness: No or doubtful		Appropriateness: Yes	Total	N	Chi-square	P
High DAT	.00323 - .00794	Sometimes or frequently	14		86	100	114		
		Rarely or never	12		88	100	33		
	Zero - .00322	Sometimes or frequently	11		89	100	123		
		Rarely or never	15		85	100	53		
			13		87	100	323	0.26*	NS
			Appropriateness: No	Doubtful	Yes				
Middle DAT	.00323 - .00794	Sometimes or frequently	38	20	42	100	74		
		Rarely or never	56	9	35	100	46		
	Zero - .00322	Sometimes or frequently	34	16	50	100	120		
		Rarely or never	49	20	31	100	86		
			42	17	41	100	326	11.44	<.10
			Appropriateness: No	Doubtful or yes					
Low DAT	.00323 - .00794	Sometimes or frequently	84	16		100	38		
		Rarely or never	74	26		100	38		
	Zero - .00322	Sometimes or frequently	89	11		100	131		
		Rarely or never	98	2		100	110		
			90	10		100	317	17.63*	<.01
						Total	12 df	29.33	<.01

* Corrected for continuity.

evidence that counselor-student ratio was more effective in combination with certain categories of a second variable. Furthermore, the second variable in both cases reflected activity on the part of the faculty at large.

The reader may have noticed in the sub-table for low DAT that the largest percentage (26) of the less-inappropriate answers is not that corresponding to the combined higher categories of the two predictor variables. The percentage corresponding to the combined higher categories of the predictor variables is only 16 percent. This discrepancy should not be given much importance since the N in neither case is very large. The important point is that both these percentages were disproportionately large.

At this point, having found that both information-seeking by teachers and talking about test results lent strength to counselor-student ratio in predicting appropriate choices, let us see whether these two variables reinforce each other. Table V-16 shows the result of using the two variables (information-seeking and talking about tests) as multiple predictors of appropriateness, ignoring counselor-student ratio entirely.

Table V-16 is interesting because it shows information-seeking by teachers and talking with teacher or counselor about test results, in combination, to be nearly as effective in locating appropriate occupational choices as either of them was in combination with counselor-student ratio. To put more detail on this point, recall that talking to teacher or counselor about test results (as reported by students) was moderately (and significantly) related to information-seeking by teachers (Table III-18) but not at all to counselor-student ratio (Table III-19), suggesting that students' talking to teachers was reflected to an important degree in the answers to

Table V-16. Percentages of Students (a) in Categories of Schools in Which Teachers Spent Indicated Mean Hours per Semester Gathering Information About Students, Crossed with (b) Frequency of Talking with Teachers or Counselors About Standardized Test Results, Whose Occupational Choices Were Judged Appropriate to Their SWTP Abilities; Shown Separately for Three Levels of Academic Aptitude (girls choosing housewife omitted).

Academic apt.	Mean hours by teachers seeking info.	Frequency of talking about test results	Appropriateness			Total	N	Chi-square	P
			No or doubtful	Yes					
High DAT	13.50 - 28.49	Sometimes or frequently	11	89		100	133		
		Rarely or never	13	87		100	38		
	3.00 - 13.49	Sometimes or frequently	14	86		100	104		
		Rarely or never	15	85		100	48		
			13	87		100	323	0.26*	NS
			Appropriateness						
			No	Doubtful	Yes				
Middle DAT	13.50 - 28.49	Sometimes or frequently	34	24	42	100	90		
		Rarely or never	52	15	33	100	54		
	3.00 - 13.49	Sometimes or frequently	37	12	51	100	104		
		Rarely or never	51	17	32	100	78		
			42	17	41	100	326	15.36	<.02
			Appropriateness						
			No	Doubtful or yes					
Low DAT	13.50 - 28.49	Sometimes or frequently	84	16		100	64		
		Rarely or never	83	17		100	54		
	3.00 - 13.49	Sometimes or frequently	90	10		100	105		
		Rarely or never	97	3		100	94		
			90	10		100	317	7.09*	<.10
						Total	12 df	22.71	<.05

* Corrected for continuity.

the item. In other words, the item which asked about talking with teacher or counselor about test results certainly should not be taken to be merely another index of contact with counselors. The wording of the item was, "When discussing your future plans with teachers or with a counselor, do they ever mention the scores you made on standardized tests?" The intention was to prevent the meaning of the item from leaning toward, "How often do you discuss test results with faculty?" and make it lean instead toward, "When you do talk to faculty, in what proportion of your talk does the matter of test results come up?" Since students typically spend more time talking to teachers than to counselors, one would expect their answers to the item to be heavily weighted by their experiences in conversing with teachers if they took the meaning of the item as we intended it. It cannot be denied, of course, that frequency of talking to counselors had a ponderable effect on the students' answers to the item since the relation between answer to this item and visiting the counselor was shown in Table III-20 to be moderately strong. Of course, this could mean that those students who had visited a counselor were also the students who talked about test results with teachers. Given all these considerations, it seems best to take the talking-about-tests item as an indication of communication about tests from the faculty generally (though including counselors) rather than an indication primarily of contact with the counselor. Adopting this point of view, Table V-16 suggests that pertinent communication from the faculty at large was almost as effective (in respect to appropriateness of the student's occupational choice to his SWTP abilities) as the availability of counselors amid supportive faculties.

At the same time, we should not lose sight of the fact that the combination of counselor-student ratio with communication about tests from the faculty at large (Table V-15) showed the strongest statistical significance of the three combinations of variables we have studied (see Tables V-14, 15, 16). The conclusion seems inescapable that pertinent communication from counselors and teachers was indeed associated, among students of low academic aptitude, with better matches between occupational choice and SWTP abilities. Surely a ponderable portion of this association was causal, and surely a good part of the communication did utilize test results as a meaningful part of the conversation.

Here again we have a pattern of evidence which argues that counselors in Illinois high schools were indeed producing an effect which would generally be considered desirable. Table V-15 shows that occupational choices among students low in academic aptitude were more often appropriate to their SWTP abilities when there were relatively more counselors in the school and when, at the same time, teachers supported the counselors by talking to the students about their standardized test results. The degree to which counselors affected the appropriateness of the students' occupational choices is not easy to deduce from Table V-15, but we can make a rough estimate by taking the average of the "doubtful or yes" answers in the first two lines of the bottom section of the table (i.e., the average of the figures 16 and 26). Doing this gives us a percentage which is about eleven percent higher than the base rate (10) for that part of the table. This is perhaps not as much as the more optimistic reader would hope for, but it certainly seems large enough to be of practical importance.

In addition to the fact that we have found evidence to support the investment of some amount of salary money in counselors, it is also important to emphasize that fact that this evidence was turned up (as also was the positive evidence described in the last chapter) when we examined the effects of counselors in conjunction with supportive activity by teachers. In this case, the supportive activity was teachers' talking with students about test results; this seems only reasonable, since the criterion variable was appropriateness of occupational choice in respect to test scores.

Finally, I must again urge the importance of further research on these matters. Our criterion variable in this instance was the appropriateness of occupational choice to abilities as assessed by the tests of the SWTP. The tests of the SWTP assess some important symbolic abilities, but they certainly do not yield a thorough mapping of the gamut of abilities to be found among humankind. It may be that counselors and teachers, in talking with students about their occupational goals, give no weight to abilities of types beyond those represented by the SWTP. Or it may be that they do. Whether they do, or to what extent they do, is at present unknown.

A few more points before we leave this section. First, the patterns of relations in Tables V-15 and 16 deserve attention. In the sub-tables for the middle range of DAT, the main relation did not reach the .05 level of significance in Table V-15 but did in Table V-16. Conversely, in the sub-tables for low DAT, the main relation surpassed the .05 level in Table V-15 but did not do so in Table V-16. The overall trend in each table surpassed the .05 criterion, the patterns of disproportionality in the two tables were remarkably similar, and, where the significance level in a sub-table for middle or low DAT failed to reach .05, it did reach close to it. For these reasons I propose to relax my insistence upon the .05 level of significance in this one instance and conclude that the relations under middle DAT and under low DAT in both Tables V-15 and 16 are worth careful notice. Comparing the patterns under low DAT with those under middle DAT, then, one difference is immediately apparent. Under low DAT, the appropriateness of occupational choice tended roughly to follow along with both of the predictor variables. Percentages of less-inappropriate choices were higher when both predictor variables were higher and the percentage of flatly inappropriate choices was highest in both tables when both predictor variables were low. Under middle DAT, however, the appropriateness of choice seemed in both tables to follow more closely the variable of talking about test results, with the other variable showing less effect. These patterns will be discussed in more detail below. Finally, as we have seen in other tables in this chapter, students of high academic aptitude seemed insignificantly affected by any of the variables being studied in Tables 15 and 16. Their percentages of appropriate choices were very high, and the proportions did not vary significantly under any of the conditions laid out in the tables.

Combinations of three variables. The relations among the variables we have been discussing are summarized in Table V-17 as well as can be by using all three variables (counselor-student ratio, information-seeking by teachers, and talking about test results) as multiple predictors of appropriateness. Unfortunately, students of low and middle DAT had to be pooled in order to keep the frequencies in the crossed categories or "cells" of the table large enough to permit a significance test. As a result, the different effects within the low- and middle-DAT students which we saw in Tables V-15 and 16 are obscured. Nevertheless, Table V-17 makes it doubly clear that if effects from counselors or faculty are to be found, they will be found among the students of lower academic aptitude.

We need not, however, stop with the obscurity of Table V-17. A way was found to stretch out the data of Table V-17 into a more detailed

Table V-17. Percentages of Students (a) in Categories of Schools with Indicated Counselor-Student Ratios, Crossed with (b) Categories of Schools in Which Teachers Spent Indicated Mean Hours per Semester Gathering Information About Students, Crossed with (c) Frequency of Talking with Teachers or Counselors About Standardized Test Results, Whose Occupational Choices Were Judged Appropriate to Their SWTP Abilities; Shown Separately for Two Levels of Academic Aptitude (girls choosing housewife omitted).

Counselor-student ratio	Mean hours per semester spent by teachers in seeking info.	Frequency of talking about test results	Appropriateness: No or doubtful	Appropriateness: Yes	Total	N	Chi-square	P
High DAT								
.00323 - .00794	13.50 - 28.49	Some or freq.	11	89	100	88		
		Rare or never	11	89	100	27		
	3.00 - 13.49	Some or freq.	23	77	100	26		
		Rare or never	17	83	100	6		
Zero - .00322	13.50 - 28.49	Some or freq.	11	89	100	45		
		Rare or never	18	82	100	11		
	3.00 - 13.49	Some or freq.	12	88	100	78		
		Rare or never	14	86	100	42		
			13	87	100	323	3.34	NS
			Appropriateness: No	Appropriateness: Doubtful or yes				
Low and middle DAT								
.00323 - .00794	13.50 - 28.49	Some or freq.	49	51	100	79		
		Rare or never	59	41	100	53		
	3.00 - 13.49	Some or freq.	64	36	100	33		
		Rare or never	74	26	100	31		
Zero - .00322	13.50 - 28.49	Some or freq.	60	40	100	75		
		Rare or never	76	24	100	55		
	3.00 - 13.49	Some or freq.	64	36	100	176		
		Rare or never	77	23	100	141		
			65	35	100	643	24.32	<.001
						14 df	27.67	<.02

display. As well as asking the students their most preferred occupational choices, the students' questionnaire also asked them their second choices. The judges judged these second choices in the same way they judged the first. The judgments of the two occupational choices were then combined by a kind of averaging rationale as shown in Table V-18. This technique gave us five categories of appropriateness instead of three and enabled the data to be divided a little more equally within each level of DAT.*

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* The relation between appropriateness judgments using first occupational choice only and those using both occupational choices is shown in Appendix V-C.

The new categories of appropriateness were used in constructing Table V-19, which is laid out similarly to Table V-17; it differs from Table V-17 in its categorization of appropriateness, in the fact that three levels of DAT could be separated, and in the ordering of the predictor variables and their categories listed in the left part of the table. The categories of the predictor variables were rearranged for easier inspection of the pattern of the results.

Table V-19 parallels Tables V-15 and 16 very closely as to pattern of outcome and can reasonably be taken to portray what we would have obtained from judgments only of the first occupational choice had we had more cases.*

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* To discern the parallelism we can note, for one thing, that Tables V-15 and 16 showed no significant relation under high DAT; neither does Table V-19. For another thing, looking at Table V-15 under middle DAT we see a disproportionately high percentage of doubtful appropriateness for the high category of counselor-student ratio combined with sometimes or frequent discussion of test results. Looking at Table V-16, again under middle DAT, we see a similar disproportionality for the high category of information-seeking by teachers combined with sometimes or frequent discussion of test results. Correspondingly, in Table V-19 (where the doubtful choices under middle DAT have been pooled with the yes-appropriate choices) we find a similarly "heavy" cell in the corresponding place; namely,

Table V-18. Manner of Combining the Students' First and Second Occupational Choices in Respect to Their Appropriateness to the Students' SWTP Abilities. (Each occupational choice of the student was judged separately for appropriateness to his SWTP abilities. The two x's in any row indicate a pattern of judgments which was assigned the new label at the left. The new labels are those used in Table V-19 and the accompanying text.)

	Appropriateness of the two occupational choices			
New label	No	Doubtful	Yes	SWTP scores not relevant, occ. choice is vague, or no second choice
Yes			xx	
			x	x
Probably		x	x	
Doubtful		x		x
		xx		
	x		x	
Unlikely	x	x		
No	xx			
	x			x

Table V-19. Percentages of Students (a) in Categories of Schools with Indicated Counselor-Student Ratios, Crossed with (b) Categories of Schools in Which Teachers Spent Indicated Mean Hours per Semester Gathering Information About Students, Crossed with (c) Frequency of Talking with Teachers or Counselors About Standardized Test Results, Whose First and Second Occupational Choices Were Judged as Having the Indicated Appropriateness to Their SWTP Abilities; Shown Separetely for Three Levels of Academic Aptitude (girls choosing housewife omitted).

Line	Frequency of talking about test results	Counselor-student ratio	Mean hours per semester spent by teachers in seeking info.	Appropriateness: No to probably	Appropriateness: Yes	Total	N*	Chi-square	P
High DAT									
1	Some or freq.	.00323 - .00794	13.50 - 28.49	17	83	100	90		
2			3.00 - 13.49	23	77	100	26		
3		Zero - .00322	13.50 - 28.49	22	78	100	45		
4			3.00 - 13.49	24	76	100	83		
5	Rare or never	.00323 - .00794	13.50 - 28.49	18	82	100	28		
6			3.00 - 13.49	17	83	100	6		
7		Zero - .00322	13.50 - 28.49	36	64	100	11		
8			3.00 - 13.49	26	74	100	42		
				22	78	100	331	5.11	NS

continued next page

Table V-19 continued.

Line	Frequency of talking about test results	Counselor-student ratio	Mean hours per semester spent by teachers in seeking info.	Appropriateness: No or unlikely	Appropriateness: Doubtful to yes	Total	N*	Chi-square	P
Middle DAT									
9	Some or freq.	.00323 - .00794	13.50 - 28.49	32	68**	100	57		
10			3.00 - 13.49	43	57	100	23		
11		Zero - .00322	13.50 - 28.49	38	62	100	39		
12			3.00 - 13.49	31	69	100	86		
13	Rare or never	.00323 - .00794	13.50 - 28.49	44	56	100	32		
14			3.00 - 13.49	73	27	100	15		
15		Zero - .00322	13.50 - 28.49	54	46	100	24		
16			3.00 - 13.49	46	54	100	65		
				41	59	100	341	14.84	<.05
				Appropriateness: No	Appropriateness: Unlikely to yes				
Low DAT									
17	Some or freq.	.00323 - .00794	13.50 - 28.49	72	28	100	29		
18			3.00 - 13.49	75	25	100	12		
19		Zero - .00322	13.50 - 28.49	76	24	100	38		
20			3.00 - 13.49	83	17	100	97		
21	Rare or never	.00323 - .00794	13.50 - 28.49	64	36	100	22		
22			3.00 - 13.49	65	35	100	20		
23		Zero - .00322	13.50 - 28.49	82	18	100	33		
24			3.00 - 13.49	91	9	100	81		
				81	19	100	332	16.74	<.02
							21 df	36.69	<.02

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* Frequencies are larger in this table than in some previous tables because here there were two occupational choices, either of which or both might be codable, instead of only one. See Appendix V-B for coding.

**Where N is considerably less than 100, the seeming precision of the percentage is spurious. Disproportionalities are underlined only when the obtained frequency exceeded the random expectation at least by 2.

in line 9. Other correspondences can be traced in this manner. In fact, all the chief features of Tables V-15 and 16 are closely mirrored in Table V-19.

Using Table V-19 as a guide, let us recapitulate our findings.

Recapitulation

The appropriateness (according to the judges) of the student's occupational choice to his SWTP abilities was not found to be related to whether the student had visited a counselor. Other first-run tests revealed, nevertheless, that appropriateness was related to counselor-student ratio, to frequency of information seeking by teachers, and to the frequency with which the student discussed test results with teachers or counselors. Because of various complications in the data, however, these simple relations could not be taken at face value.

Dividing the data by level of academic aptitude, we next found (Table V-12) that counselor-student ratio was related to appropriateness only among students of low academic aptitude. This finding can be seen also in the low-DAT section of Table V-19; under the appropriateness heading "unlikely to yes" (which could be rephrased "not completely inappropriate") the three largest underlined percentages are found to correspond to the higher range of counselor-student ratio (lines 17, 21, 22) while only the lowest underlined percentage (line 19) corresponds to the lower range of counselor-student ratio. (Underlining indicates a percentage clearly higher than the proportion to be expected by chance.)

We saw in Table V-13 that frequency of information-seeking by teachers, like counselor-student ratio, also was related to appropriateness only within low academic aptitude. Looking for the reflection of this relation in Table V-19, we see in lines 17, 19, and 21 three underlined entries under the less-inappropriate heading and corresponding to the higher range of information-seeking but only one underlined entry (line 22) corresponding to the lower range of information-seeking.

When categories of counselor-student ratio and information-seeking by teachers were considered in combinations, the two variables were found to reinforce each other among low-DAT students (Table V-14) in locating the disproportionately high percentages of the more appropriate choices. This effect is seen in Table V-19, where the entries for the high categories of the two variables in lines 17 and 21 are underlined in the not-completely-inappropriate column, and the entries in the same column for the low categories of the two variables (lines 20 and 24) are not only not underlined but are the lowest percentages in the column.

Although by itself the variable of talking with teachers or counselors about test results was not found to be significantly related to appropriateness of occupational choice when controlled for academic aptitude, nevertheless the variable becomes very important when considered in combination with other variables. By listing first in Table V-19 all the crossed categories of the three predictor variables which contained the higher categories of this variable (the higher category being "sometimes or frequently"), we were able to arrange the entries so that all the underlined percentages under the more-appropriate-choice heading fell earlier than any of the underlined percentages under the less-appropriate-choice heading, and it was possible to do this both within the middle-DAT sub-table and within the low-DAT sub-table. Since it was possible to do this while still maintaining the high-to-low order of categories within the other two variables, this means that the variable of discussing test results is a necessary ingredient in the pattern of the results -- that the variable has an important role in locating the disproportionately high percentages of the more appropriate choices.

In fact, the variable of discussing test results can be seen in Table V-19 to be the most important one among middle-DAT students. The underlined percentages under the more-appropriate-choice heading (lines 9 and 12) occur only with the higher category of discussing test results. In contrast, these same underlined percentages occur with both higher and lower categories of the other two variables.

Looking now at the low DAT section of Table V-19, it is evident that the more important variables for students of low academic aptitude were counselor-student ratio and information-seeking by teachers, while discussion of test results had less to do with appropriateness of occupational choice. Where counselor-student ratio and information-seeking were both high among low-DAT students, the percentages of less-inappropriate choices were 28 and 36 (lines 17 and 21); where one or the other was high though not both, the percentages were 25, 24, 35, and 18 (lines 18, 19, 22, 23); where neither was high the percentages were 17 and 9 (lines 20 and 24). Considering the small number of cases in the crossed categories, these three groups of percentages seem remarkably distinct. Table V-20 gives a graphic picture of these percentages. It can be seen in Table V-20 that the two variables counselor-student ratio and information-seeking were associated with clear differences in the percentages of appropriate choices; on the other hand, the variable of discussing test results did not distinguish among the three groups of percentages shown; within every one of the three groups of percentages in Table V-20, it can be seen that high and low categories of test discussion were equally represented.

Table V-20. Low Academic Aptitude Only: Percentages of Students Within the Categories of Table V-19 Whose First and Second Occupational Choices Were Judged "Unlikely to Yes" in Appropriateness to Their SWTP Abilities; Arranged Under Combinations of the Variables of Table V-19 and in Rank Order of Magnitude Down the Page.

Counselor-student ratio and information-seeking by teachers			
Both low	One high, one low	Both high	Category of talking about test results
		36	Rarely or never
	35		Rarely or never
		28	Sometimes or frequently
	25		Sometimes or frequently
	24		Sometimes or frequently
	18		Rarely or never
17			Sometimes or frequently
9			Rarely or never

In short, counselor-student ratio and information-seeking by teachers were the variables of primary importance in predicting appropriate choices among low-DAT students while talking with faculty about test results was the most distinguishing variable among the middle-DAT students. The point here is that counselor-student ratio was weak and unclear in predicting appropriateness of choice when left to itself (Table V-12). With the aid of other variables reflecting activity on the part of the faculty at large, however, counselor-student ratio helped to locate those students making the more appropriate choices. With the use of all three variables, the disproportionalities formed a regular and meaningful pattern and reached magnitudes of practical degree (Table V-19).

Among students of high academic aptitude, of course, none of the auxiliary conditions were of noticeable importance. About 80 percent of the high-DAT students were rated as making appropriate choices of both first and second occupations, and no significant effect was discernible from the other variables. In speculating upon this pattern of results, one might entertain the hypothesis that most of the high-DAT students find occupations suited to their abilities pretty much without regard to the help formally offered by the school, the middle-DAT students profit somewhat from specific discussion of abilities and test scores, and the low-DAT students are aided by more general and possibly less technical discussions of their future.

Using both the first- and second-choice occupations given by the students (as was done in Table V-19), a large number of other tests were run involving the appropriateness of the occupational choice to SWTP abilities. These fell substantially into the same picture already presented. The further tests are listed in Appendix V-A. Some relations already discussed in this chapter and in Chapter IV between counselor-student ratio and the several criterion variables were given further tests in which the no-counselor schools were singled out from the rest. The results showed nothing new; they are displayed in Appendix V-D.

As a final word on these encouraging findings, we should remind ourselves that we cannot conclusively tell from these data whether the higher proportions of appropriate choices which we found in certain places came about because teachers and counselors were actually using test scores from the SWTP or from other tests or whether instead they were talking to students only on the basis of fairly accurate impressionistic personal assessments of the students' abilities, accurate enough to agree to a significant extent with the diagnoses the tests would have given. The one clue we have is that the report of the students on their discussions about test results did show an important relationship to appropriate choices among students of middle-DAT scores. This encourages us to believe that faculty in our sample actually were referring to tests and talking about the results with students to a degree which showed up in our tables. The extent to which tests are used in today's schools, however, and the extent to which predicted effects of their use occur in measurable degree are matters deserving much more research.

Summary

In this chapter we have looked at three criteria: (1) getting students of high academic ability into the college-preparatory curriculum, (2) matching the curriculum with the occupational choice, and (3) matching the occupational choice with SWTP abilities. We sought evidence that either of our two chief predictor variables (counselor-student ratio or visiting the counselor) was associated with any of the three criteria.

We found some evidence, very weak, that the activity of counselors was producing some increase in the proportion of girls of high academic aptitude enrolling in college-preparatory curricula. We found no significant association between the availability of counselors and the appropriateness of the student's curriculum to his occupational choice.

Among students in the middle and low ranges of academic aptitude, we did find evidence (Tables V-12, 14, 15, 17, 19) that counselor-student ratio was associated with the appropriateness of the student's occupational choice to his SWTP abilities. Again, however, the essential qualification must be made that the association between counselor-student ratio and appropriateness became discernible only when variables reflecting support from the faculty were considered simultaneously with counselor-student ratio. The pair of variables which did best in "predicting" appropriateness of occupation to SWTP abilities was counselor-student ratio and talking with teacher or counselor about test results (Table V-15). Carrying the analysis to more detail, we found (Table V-19) that frequency of discussing test results was the more effective predictor among students in the middle range of academic aptitude and that counselor-student ratio was the more effective predictor among students in the lowest range of academic aptitude. None of the variables tested as predictors distinguished appropriateness of occupational choice among students of high academic aptitude.

As a way of providing some detailed data for the curious, Appendix V-E gives values of the chief variables we have been discussing in this chapter and the last -- values for each school in which students were sampled. The next chapter will discuss some implications of the results seen so far. In the course of the commentary some pertinent results will be presented from later studies.

CHAPTER VI

REVIEW OF THE EVIDENCE: WITH SOME SOCIAL-PSYCHOLOGICAL NOTES ON PROMOTING GUIDANCE IN THE SCHOOL

Although it will be a little repetitive to do so, I shall begin this chapter by setting down (in as brief and unadorned a manner as possible) the most salient findings which have been described in Chapters IV and V. I shall then put forth some thoughts about policy and future research which these findings bring to mind.

The findings in favor of the effectiveness of guidance counseling were three. First, the exactness of students' knowledge about the educational requirements of their chosen occupations was found to be predictable to a significant degree, even when the academic aptitude of the student was taken into account, by knowing two things: (1) whether the student had visited a counselor and (2) the average frequency with which teachers in the school took time to gather information about students (Table IV-7). Second, there was some slight evidence that the presence of relatively more counselors was accompanied by larger proportions of girls of high academic aptitude being found enrolled in college-preparatory curricula (Table V-4). The frequency with which students were found to have chosen occupations appropriate to their SWTP abilities was significantly related to counselor-student ratio, to information-seeking by teachers, and to each of these two variables in combination with talking to teacher or counselor about test results (Tables V-12, 13, 15, 16, 19). These are the findings from this study to which one can point as evidence for the proposition that guidance counseling, as it is practiced today in unselected schools, does affect students in ways which would widely be considered desirable.

The last two chapters also told about some searches which failed to produce evidence for effectiveness of counseling. With the academic aptitude of the student taken into consideration, no relation could be demonstrated between counselor-student ratio and the student's knowledge about the educational requirements of his chosen occupation. None of the predictor variables showed any relation to the type of answer the student made concerning the abilities and skills needed in the occupation, to specificity about the duties of the occupation, nor to the appropriateness of the student's choice of occupation to his curriculum. No relation appeared between visiting the counselor and the appropriateness of occupational choice with respect to SWTP abilities.

Aside from the four variables used in Chapters IV and V as reflecting the availability of guidance from counselors or teachers, and therefore used repeatedly in various combinations as predictor variables, some other variables also were examined in a number of analyses and several significant relations turned up between these auxiliary variables and certain criterion variables. Among females only, curriculum was associated with type of answer given concerning abilities and skills needed in the chosen occupation (Table IV-8). In respect to the duties demanded by the occupation, college-preparatory students _less_ frequently gave specific answers than did students in other curricula (Tables IV-14, 20). Among females only, the preferred occupation was associated with type of response concerning abilities and skills needed in the occupation (Table IV-9). Compared to students choosing other occupations, students intending to become teachers more frequently gave answers expressing values or ideals when asked about the duties in the occupation (Tables IV-23, 24). Academic aptitude was related to curriculum and also to the appropriateness of the student's occupational choice to his curriculum (Tables V-1, 8).

These findings suggest some conclusions and raise some questions.

The Evidence for Counseling Effectiveness

As explained in Chapter II, the schools in this study were unselected in the sense that conditions which might help or hinder the effectiveness of the guidance efforts in the school were left to occur randomly among the schools we studied. The schools in which the responses of students were studied were selected with strict randomness from public high schools in Illinois enrolling more than 500 students and participating in the SWTP in 1958-59. Even though we took care in this manner that our schools would be given no chance of showing up better than any representative sample selected by anyone else, nevertheless we found some evidence in our data that guidance efforts were being effective. Looking at certain kinds of students' responses typically accepted as goals by guidance people, we found that the desirable responses occurred with greater relative frequency in schools where guidance services had been more widely available to students and occurred less often in schools where guidance was harder to obtain. More specifically, we found evidence that students in the middle and low ranges of academic aptitude were benefiting from the efforts of counselors in schools where counselors were aided by supplementary guidance activity on the part of the teachers; at least, the students in these schools showed more knowledge about their chosen occupations and made more appropriate occupational choices, in certain respects, than did students in other schools.

Such an overly simple statement of our findings, however, is misleading. One cannot conclude from our results that counselors are generally achieving the goals they strive for. It would be thoroughly wrong to conclude from this study that the best thing to do about present-day guidance is to leave well enough alone. On the contrary, each bit of encouraging evidence displayed in Chapters IV and V was accompanied by important qualifications. These qualifications must be kept in mind if our results are to be understood. In fact, the qualifications are the more important part of the results since they contain the clearest suggestions for policy and the firmest hypotheses for further research.

The Density of the Evidence

One way of putting the results of this study into a nutshell is to say that evidence for the effectiveness of guidance counseling can be found if one looks far enough. Our analyses ranged over four predictor variables, six criterion variables (for some of which we tried more than one manner of measure), and a number of control or intervening variables. Out of all the possible combinations of these variables, only three criterion variables showed significant associations with indices of guidance availability. The three criteria were:

> Exactness of student's knowledge about educational requirements of the chosen occupation (Table IV-7).

Proportion of high-aptitude students enrolled in college-preparatory curricula (probably holds for females only, see Table V-4).

Appropriateness of the student's occupational choice to his SWTP abilities (Table V-19).

Although each of these criterion variables showed a significant relation with one or more of the four predictor variables, none showed significant relations with all four. Furthermore, there were three criterion variables which showed a significant relation with none of the indices of guidance availability; namely,

Knowledge of abilities and skills needed in the chosen occupation.

Specificity about the duties demanded by the occupation.

Appropriateness of the student's occupational choice to his curriculum.

In brief, evidence for the effectiveness of counseling turned up only here and there in our data; the density of evidence in the data was low. At the same time, the significant findings occurred among our data very much more often than one could expect to find by chance. Furthermore, the significantly favorable evidence in our data was more dense than in the study by Rothney (1958), for example.

In respect to the favorable evidence we found, there are two conclusions which are important both for practitioners and for researchers. First, evidence for the effectiveness of guidance as typically practiced today is not easy to find. When found, it is not simple; it lies in the complex interrelations of a number of variables. Second, evidence that guidance is effective in one respect (according to one criterion) cannot be taken as an indication that guidance is effective in another.

The second conclusion deserves a few examples. For one, finding that guidance counseling is engendering a more precise notion of the educational requirements for the chosen occupation should not lead us into believing that the students are also forming clearer visualizations of what they will be getting into when they enter their chosen occupations. For another, if we find that more students are choosing occupations which match with their scholastic abilities (as assessed, e.g., by the SWTP), we should not suppose that they are also achieving a good match between curriculum and occupational choice. Nor should a good match between occupational choice and typical scholastic abilities cause us to ignore the possibility of a bad match between the occupational plans of the student and some of his further abilities or proclivities not usually assessed by the school.

Support from Faculty

No one will argue the point that some conditions can help and other conditions hinder the work of the guidance counselor. Arguments arise in the attempt to pick out those particular conditions which help more or hinder most. Our data cannot help anyone in the argument current among guidance people concerning the exact degree to which guidance responsibilities should be parcelled out among the faculty; our results do abet those, however, who urge that the faculty undertake some amount of guidance activity in coordination with the work of the counselors.

We employed two variables which seemed to index one or another kind of guidance activity on the part of teachers. One was the frequency with which teachers took time to gather information about students;

presumably they did this so as to use the information in working with students. This variable was a somewhat global index of faculty guidance activity. The other was the report by students of the frequency with which teachers and counselors discussed their standardized test results with them. This index was comparatively specific to a particular aspect of guidance. Both these indices figured importantly in our results.

When visiting the counselor was considered in conjunction with information-seeking by teachers, we found that these two variables could point out to a significant degree those students who gave relatively exact answers to the question about the education required to enter the chosen occupation (Table IV-7). Again, when counselor-student ratio was considered in conjunction with talking with teachers about test results, we found those students pointed out (to a significant degree) whose occupational choices were appropriate to their SWTP abilities (Table V-15).

The conclusion here, certainly, is that guidance counselors will have an especially difficult task if their work is not supplemented at least to some extent by the faculty.

Varieties of Faculty Aid

Our results concerning the importance of faculty support show more than the mere fact that supplementary work by teachers is necessary to maximize the effectiveness of the counselor. Our results also show, or at least suggest, that different kinds of faculty activity aid in achieving different kinds of guidance goals and in helping different kinds of students. General information-seeking by teachers was more helpful than talking with students about test results in respect to improving the knowledge of students about educational requirements for occupations (Table IV-7). On the other hand, teachers talking with students about test results was more effective, on balance, than general faculty information-seeking in respect to increasing the appropriateness of occupational choice to SWTP abilities (Table V-15). This seems only reasonable.

Furthermore, different kinds of faculty aid seemed differentially suited to students of differing academic aptitude. When we looked at the appropriateness of the student's chosen occupation to his SWTP abilities, we found that talking with teachers about test results best augmented the effects of counselor-student ratio among middle-DAT students, but that general information-seeking by teachers gave the best augmentation among low-DAT students. These findings suggest (1) that different kinds of knowledge or choice on the part of students are best influenced by different strategies of communication and (2) that techniques of communication with students, even when communicating about the same topic with them, should be adapted to the intellectual skills of the individual student. These conclusions will not surprise school teachers.

Effects Among Levels of Academic Aptitude

Even where we found favorable evidence for the effectiveness of guidance activity, the evidence was found only among students of the middle and low ranges of academic aptitude (Tables IV-7 and V-19). We found no evidence anywhere of any effects of guidance among students in the upper third of the distribution of academic aptitude. This result sets off a variety of speculations.

Responding to the "needy" cases. One possibility which comes to mind is that guidance counselors are working with the most "needy" cases; that is, with those students whose visions of the future are most out of touch with reality. And reality, I suppose, is defined by counselors largely in terms of the dichotomy between curricula which terminate with high school on the one hand and the going-on-to-college curricula on the other. Viewed in terms of this dichotomy, the general academic aptitude of the student would weigh heavily in the counselor's judgment. When we then recall that students of poor academic aptitude tend to name preferred occupations requiring more education than they are likely to complete, it follows that the counselor would tend to find the students most in need of advice among those of average and low academic aptitude. If the counselor's time is limited and he feels he should turn first to those students who seem to be making the worst guesses about the future, we would then find the results of his efforts to be more visible among students of middle and low academic aptitude rather than among those of high.*

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*To illustrate some "needy" cases, here are some examples which the judges designated "inappropriate": a boy looking toward engineering who, though in a college-preparatory curriculum, was taking inappropriate courses and was at about the 25th percentile (statewide norms) on DAT Total score; a girl in a college-preparatory curriculum naming secretary as an occupational goal who was at the 5th percentile on DAT; a girl in a commercial curriculum naming nurse who was at the 25th percentile on DAT; a girl in a commercial curriculum naming beautician who was at the 5th percentile on DAT; a girl in a commercial curriculum who named teacher and was at the 33rd percentile on DAT; and a boy in a vocational curriculum who named physician and was at the 30th percentile on DAT.

If this reasoning is correct, we should find that our data showed effects of guidance activities on criteria in respect to which the high-DAT students were "better off" than the middle- and low-DAT students. For example, since we found evidence that more guidance availability was associated with exactness of the student's knowledge about educational requirements, we should find that high-DAT students more frequently gave exact answers than did students of lower DAT scores. That is, if my supposition is correct that counselors were turning to that segment of the student body containing the greater density of "needy" cases and if the density of "needy" cases was greater among students of the middle and low ranges of academic aptitude, then the data should show that students of middle- and low-DAT were giving fewer "desirable" answers to those criteria where there was evidence that counselors were having effects.

The first two lines of Table VI-1 list the criteria where our results concerning effectiveness were clearest, and we see there that in each case that a smaller percentage of middle- and low-DAT students gave the "desirable" answers than did the high-DAT students. This justifies us in thinking that the hypothesis is not an impossible one.

Unfortunately, the matter gets complicated when one turns to the converse. Should one find that guidance was effective in respect to every criterion which showed more high-DAT students giving "desirable" answers than did other students? Not necessarily, obviously. Effects of counseling would not be likely to show up unless the counselors (and their teacher colleagues) were actually attempting to have effects, and

Table VI-1. **Percentages of Students Within Indicated Levels of Academic Aptitude Who Gave Indicated Types of Responses to Several Criteria.**

	DAT	
Criterion item	Middle and low	High
Percentages giving exact answers concerning education required for chosen occupation (see also Table IV-3)	47	55
Percentages with chosen occupation judged appropriate to SWTP abilities (see also Table V-12)	25	87
Percentages enrolled in college-preparatory curricula:		
Males	37	77
Females	47	80
Percentages with curriculum judged appropriate to chosen occupation (see also Table V-8)	49	72
Percentages naming knowledge typically learned in school in response to question about abilities and skills needed	57	49
Percentages giving specific answers concerning duties demanded by the occupation (see also Table IV-14):		
By students in college-preparatory curricula	35	28
By students in commercial curricula	72	65
By students in vocational curricula	48	42
By students in mixed curricula	59	44

we have no way of being sure that the counselors and teachers were attempting to achieve all the goals which we have selected in this study as criteria for guidance effectiveness. We have some reason to believe (see Chapter IV) that increasing the knowledge of students about the actual duties demanded by their chosen occupations was not important to counselors and teachers, and they may also have paid little attention to some of our other criteria.

The hypothesis concerning the focus of the counselor's efforts received no contradiction from our data, but neither did any really convincing evidence adhere to it. A little more argument in its favor, however, will be presented below.

Helping the high-ability student. Since we found that guidance activities in the schools in our sample showed effects only among students in the middle and low ranges of academic aptitude, it might seem at first thought that these students were the ones who could be influenced by the guidance activities; in other words, that the students in the middle and low ranges are the most responsive and will best repay the efforts of counselors and teachers. What, then, are we to make of the fact that the greater numbers of high-DAT students were to be found in the schools having the higher counselor-student ratios (see Table III-12)? Are the greater numbers of counselors being marshalled where they can have the least effect?

Looking back at Table VI-1, there seems ample work for counselors to do even among students in the upper third of academic aptitude. Although some of the percentages of high-DAT students shown as giving "desirable" answers in Table VI-1 are fairly high, many are nearer 50 percent than 100. It is true that the simple items we used in our questionnaire do not give a very precise notion of the extent of knowledge the student may have had about these matters, but the items certainly seem to me to represent minimal levels of knowledge to be desired. For example, it seems to me reasonable to wish that more than 55 percent of high-DAT students could have specified both the number of years and the broad kind of institution* their chosen occupation would require in the way of further education.

On the other hand, some of the figures for the high-DAT students in Table VI-1 may be high enough. We see there that 77 percent of high-DAT males and 80 percent of high-DAT females were enrolled in college-preparatory curricula. Surely some people of high academic aptitude are needed in occupations which do not require college educations. There are those, of course, who would say that this is no reason to let young people of high academic ability skip college. There are those who believe, if not that everyone should go to college, at least that all those in the upper ranges of academic ability should go to college because they can "profit from it." I made some remarks about this point in the first part of Chapter V, but I shall repeat here that I think an important fraction of young people of "academic ability" do not profit from college. I know of no systematic data on the matter, but there is a reasonably widespread body of opinion which holds that colleges, as most are now operated, tend to produce serious disaffection among an important fraction of young people having exceptionally original, quick, or insightful minds.

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*This is the definition of an "exact" answer which was given in Chapter IV.

Matching colleges and people. The important problem, of course, is not how many should go to college but who should go to what kind of college. At present, the intellectually active student who in high school is already impatient with his teachers has only Hobson's choice. He can go on to college to face further frustration and disenchantment with institutional routines, or he can commit himself to a vocation with very little chance of returning to formal education at a later date. There are some experiments going on with the idea of making education continuously available to adults, however; and it is to be hoped that the growing necessity for re-training skilled workers will encourage this trend. Ideally, an individual should turn to productive work and to further learning when he is most ready to profit from each. As the opportunities for adults to attend college increase, one would further hope that colleges or courses of study would spring up adapted to the intellectually active student who would wither or rebel under the impersonal lock-step of the typical freshman curriculum.

I have mentioned two reasons that the total number of high-aptitude students preparing for college should not reach 100 percent, and both seem to me defensible even though they admittedly contain more ramifications than I feel justified in giving room here. One was the evident need of many occupations not requiring college training for persons of high ability in dealing with symbolic materials, and the second was that the intellectual development of a few young people is more likely to be hurt than helped by the arbitrary routines typical of beginning courses in most colleges today.

A third reason that the total figure on students of high academic aptitude preparing for college should not soar too high is connected with the point about being ready for (or needing, in a psychological sense) work or college at different periods. Our society is producing a group of youth who should be got into gainful occupations as soon as the laws permit. I am speaking here of that portion of our youth who meet early rebuffs from the adult society (through parents, teachers, employers, or whomever), who feel increasingly estranged, who fail to find a path of acceptance into adult society either through adapting to the school or through the world of work, and who eventually are found among the Beat Generation, the ranks of the juvenile delinquents, or among some other seriously disaffected group. These youth are increasing in numbers (largely because of the mismatch between the way we schedule and apportion training for youth on the one hand and the requirements of the expanding proportion of technological jobs on the other hand) and these youth are becoming an increasingly isolated and caste-like group. If some of these young people could be prepared through a commercial or vocational curriculum in high school or by a short technical curriculum immediately following high school to enter occupations early, their acceptance into the world of adult values and of immediate and respected goals could restore some of them to the majority society. Some of these students turning onto the melancholy path away from an unheeding society are certainly to be found in the upper third of academic aptitude, and some are surely even now to be found in college-preparatory curricula. Yet youth who early feel seriously "out of" their society need to enter the adult world as soon as possible. College will not put them there. This, too, is a complicated matter; perhaps I have already spent too much rhetoric upon it. The nuances of the problem have been discussed in a number of places; the best-integrated account known to me is that of Goodman (1960).*

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*Goodman, Paul. Growing Up Absurd. Random House, 1960.

Aside from the arrogance of supposing that we know exactly the thing to do with all students of high academic ability, one can also look askance (as I did in Chapter IV) at the supposition that all students ought to be clearly aware of what people in their chosen occupations actually do and at the proposition that every student's choice of occupation ought to be appropriate to those of his abilities assessable by a particular battery of tests. Even with these criteria set aside as not necessarily good for everybody, however, Table VI-1 still presents us with three criteria in respect to which we could reasonably wish that the percentages of "favorable" answers had been much higher than they were. These criteria have to do with the exactness of knowledge about educational requirements, appropriateness of curriculum to occupational choice, and knowledge about abilities and skills needed.* No doubt the reader can supply other kinds of knowledge and choice on the part of students which he feels proper guidance could improve, even among students of high academic aptitude. Thinking of the potential impact of counselors, let us review certain of the findings on counselor-student ratio.

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*If the reader is not satisfied with abilities and skills "typically learned in school" as a category of awareness which should have received chief attention in our explorations, he should know that this was the category which gave us the best relations with other variables (such as they were); other categories did not do as well.

How many counselors? The fact that guidance did show some effects in certain respects in our data, the fact that high-DAT students were left unaffected while effects of practical degree showed up among students of lower academic aptitude, the fact that there was still room for "improvement" among the high-DAT students, and the fact that the lack of effect among high-DAT students occurred even though the high-DAT students had relatively more counselors available to them -- all these facts lend credence to the idea that the counselors in our schools (and the teachers) simply did not have the time at their disposal to be effective in all segments of the student body and chose to focus their first effort upon the most obviously demanding cases. If this was indeed true, it follows that urging counselors to focus their efforts upon students of high academic aptitude (in the spirit of the present "search for talent") can only result in leaving untouched the gross errors of judgment which many, even most (see Table VI-1), of the students in the lower ranges of academic aptitude are making. The only profitable way to be of more help to the high-DAT student is to increase the availability of guidance services throughout the student body.

How much guidance service is needed? Our data cannot answer this question, but at least our study can give us good idea of what is too little. Of the schools in which we studied the responses of students, half contained 387 or more students per counselor (see Table III-1). Only a third contained fewer than 300 students per counselor, and only about a tenth contained fewer than 200 students per counselor. Our category of "high" counselor-student ratio was that in which the students per counselor were less than 310 (the mean in this "high" group was 232 students per counselor). Even so, the reader is by now familiar with the rarity with which a criterion in the schools of "high" counselor-student ratio turned out to differ significantly from the criterion in schools of lower ratios -- even from schools with no counselors at all (Appendix V-C). We might review quickly (and roughly) the effects of counselor-student ratio by looking at Table VI-2.

The second and third lines of Table VI-2 reflect the significant differences we reported in Chapter V.* The purpose of presenting Table VI-2, however, is not to call attention to the differences but to point again to the low values of some of the percentages in the column for students in schools of high counselor-student ratio. The point I am emphasizing is that there was still plenty of work left to be done even in schools with the "high" numbers of counselors available.

The obvious conclusion from all this is that one counselor per 300 students -- a criterion ratio commonly given -- is not enough. Even when we singled out the larger amounts of help from teachers and

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*The item in the first line of Table VI-2 concerning education required by the occupation was reported in Chapter IV to be significantly associated with visiting the counselor, not with the counselor-student ratio.

Table VI-2. Percentages of Students in Schools Having Indicated Counselor-Student Ratios Who Gave Indicated Types of Responses to Several Criteria.

	Counselor-student ratio	
Criterion item	Middle and low (zero to .00322)	High (.00323 to .00794)
Percent giving exact answers concerning education required for chosen occupation (see also Table IV-1)	48	49
Percent with chosen occupation judged appropriate to SWTP abilities (see also Table V-12, ff.)	40	52
Percent of high-DAT students enrolled in college-preparatory curricula (see also Table V-2)	74	84
Percent with curriculum judged appropriate to chosen occupation	59	58
Percent naming knowledge typically learned in school in response to question about abilities and skills needed	54	55
Percent giving specific answers concerning duties demanded by the occupation (see also Table IV-10):		
By students in college-preparatory curricula	36	26
By students in commercial curricula	71	74
By students in vocational curricula	53	33
By students in mixed curricula	57	54

combined this condition with relatively greater counselor availability, we still found significant associations only with a few criteria and only among students in the middle and low ranges of academic aptitude. If guidance counseling is to show evidence in the mass of doing more than correcting gross errors of planning on the part of a few "needy" cases, the manpower devoted to it must be increased greatly. On the basis of the present data, I would guess that even doubling the present manpower will not be enough. The oft-quoted figure of at least one counselor for every 300 students (or even an average of 232) must be looked upon not as a minimum-acceptable counselor-student ratio but as a ratio far too low. I should remark again, however, that the question of how counseling duties should best be apportioned among persons appointed solely as counselors and among other types of faculty positions is a question beyond the scope of this discussion.

Improving Counseling Effectiveness

I have just said that much heavier forces must be brought to bear if the effort toward closing the gap between the school and the student's life beyond the school is to gain much momentum. Adding personnel, though it is one way to improve the situation, is not the only way; the personnel can be organized in new ways and new weaponry can be brought to bear. But there are numerous questions of method which are beyond the scope of the research which I am reporting here. Questions which I must set aside are those of the technique of counseling itself, of the distribution of particular duties among the faculty, and even many questions of the feasibility or viability of particular goals.

Nevertheless, there are some questions of method or policy which our research can illuminate. I mentioned in the Introduction that the data being reported here were taken chiefly from the first of a series of three research projects. A first analysis of data from the second and third projects* has produced some suggestions about facilitating the work of the guidance counselor, and those suggestions will be explained in this section. They are suggestions for policy which can be initiated by local administrators and do not depend on previous actions in universities or in state or national agencies. They have to do with the type of training to look for in a counselor and with communication about counseling within the school. Put over-briefly, and phrased as if I were addressing a high-school administrator, the recommendations for taking steps toward more effective guidance services (aside from those steps suggested elsewhere in this chapter) are these:

1. Begin the change process by obtaining at least two persons very highly trained in guidance and testing.
2. Aid the highly trained guidance people to spread some of their knowledge throughout the faculty.
3. Keep each counselor for five years or more.
4. To spread knowledge, open up all possible communication channels.
5. Draw frequent, recurring attention to matters of guidance and testing and to the work of the guidance experts.

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*Hastings, Runkel, and Damrin (1961) and Runkel, Hastings, and Damrin (1961).

Since I am now going to be mentioning findings from three separate samplings of schools and their personnel, it will be well to designate each of the samplings with a handy name. The first sampling is that with which we have been dealing all along up until now; its design was described in Chapter II; it will now be called the First Project. The other two research studies will be called the Second Project* and the Third Project.**

The Second Project

Before turning to the evidence supporting the first recommendation, it will help to give a brief description of the source of the data for it. These data come from the Second Project and will also be used in discussing some of the other points. The Second Project was essentially a follow-up study of a summer institute in guidance held at the University of Illinois during the summer of 1959. At the close of the institute, 28 trainees went into (or in two cases returned to) counseling positions in as many secondary schools. The sample consisted of the 28 trainees and the bulk of the faculty members in their schools. Although this was not a random sampling of the state, the schools represented a broad range of chatacteristics. In regard to the particularly relevant variable of counseling facilities, they ranged from schools with large full-time counseling staffs to schools in which the summer institute participant was not only the single counselor but a part-time one at that.

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*Hastings, Runkel, and Damrin (1961).

**Runkel, Hastings, and Damrin (1961).

Every administrator and every counselor in these schools was invited to become a subject in the study. The participation of all teachers was sought in schools with 25 or fewer faculty; in larger schools about half the teachers were selected. The percentages of returns from faculty members were about 80 in the fall of 1959 and about 70 in the fall of 1960.

Technical Knowledge and Communication with Others

The findings I am about to recount focus upon the attention given to standardized test results by the faculty, but the principle involved seems equally applicable to any aspect of guidance. The point concerns the correlates of adequate technical knowledge; the evidence from the Second Project has to do with technical knowledge about testing. Faculty members possessed of greater technical knowledge about testing, compared to those having less knowledge, turned out to be the persons who the more frequently put test results to use, and in ways generally considered desirable. In brief, those with greater knowledge reported discussing test results more frequently with other teachers as well as with parents and students. They reported a comparatively receptive attitude toward the dissemination of test results in the school, indicating their approval of a number of careful and constructive methods of disseminating test results rather than of methods which merely broadcast the results or merely left them available in the school office. Finally, on a rather precise and objective index of frequency of communication about guidance and testing, those with higher technical knowledge showed the greater frequencies of communication. In sum, the findings on this cluster of variables showed that the individuals with relatively greater technical knowledge about testing were those who were communicating more frequently about these matters with others and were more active in using test results in judicious ways. Let us turn now to details.

Test of Knowledge and Interpretation of Tests. Knowledge on the part of faculty members about testing was measured by means of a test of Knowledge and Interpretation of Tests (KIT), which focused upon understanding of fundemental principles and concepts in the ares of tests and measurement.* The KIT was administered to all subjects in the Second Project (except principals in the fall of 1959. On this fairly technical test of 60 items, the average respondent got about half the items right. Counselors averaged about seven points higher than teachers or administrators. Scores ranged from 14 to 58.

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*The KIT was developed by Dora Damrin. After pretesting on a sample of teachers not in the main study and subsequent revision, further analysis gave reliability coefficients (Kuder-Richardson formula 21) from .68 to .74 on four different samples. Seventy-three percent of the items had bi-serial coefficients with total score of .30 or above. Three sample items from the KIT follow (the entire test is given in Appendix A of Hastings, et al., 1961):

In counseling junior high school students a teacher should be most cautious in her interpretation of the information she obtains from:

A. vocational interest tests.
B. study skills tests.
C. reading comprehension tests.
D. performance tests.

A student scored at the 75th percentile on a standardized achievement test. This means that:

A. 75% of the norm group scored lower than he did.
B. 75% of the norm group scored higher than he did.
C. he answered 75% of the questions correctly.
D. he is in the upper 25% of his own high school class.

On a group intelligence test, which pupil would be most apt to receive an IQ that is much lower than his true ability?

A. Mary, whose parents speak only Spanish.
B. John, who failed in all of his school subjects last year.
C. Jane, who comes from a lower middle class home.
D. Bill, who spends all of his time in athletics instead of on his school work.

Test Attitude Index. Turning now to the receptiveness of a faculty toward testing, we conceived of this as a willingness or desire for tests to be used more widely as a means of obtaining information about students. The receptive teacher, in other words, would want test information to come to be applied more widely in the work of the school; he would wish a variety of characteristics of students to be assessed by means of tests; he would want more detailed information about the test results to be more easily available to him; he would want parents and the students themselves to profit from the information to be gained from tests. The teacher who rejects tests, however, would take the opposite point of view. With this concept of a receptive attitude toward tests in mind, items* were written which comprised twenty statements about possible applications of test results in the work of the school; the respondent was asked to check those which he felt ought to be carried out in his school, without regard to whether they were actually being done at the time. By simply counting the number of statements checked, a score was obtained ranging from zero to 20 which reflected the receptiveness of the respondent's attitude toward the use of tests in his school, in the sense we described above. The list of twenty statements comprising the

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*The items of the Test Attitude Index can be seen grouped as items 4, 8, 10, and 13 of Appendix D of the report by Hastings, et al. (1961), of which see also Chapter VII for further details.

Test Attitude Index was not developed until spring of 1960, but the statements were then administered to all respondents. The mean Index was 12.2 items receiving approval out of the 20.

The relation between KIT and the Test Attitude Index is shown in Table VI-3, where it is clear that respondents with greater technical knowledge of testing were more often those with the more receptive attitudes toward the use of tests in the school, and inversely.

Test Discussion Score. All respondents were asked in spring 1960 the following question about talking with parents:

> In talking with parents about their children, do you discuss the results of standardized tests with them?
>
> Frequently_____ 3   Rarely_____ 1
> Sometimes______ 2   Never______ 0

Two other similar questions were also asked, one about talking with students and one about talking with other teachers.* The answers to these items were weighted as in the example above and the weights from the three questions summed to obtain a total score for discussing test results with others. We called this score the Test Discussion Score. It could range from zero to 9, a higher score indicating a perception on the part of the respondent that he more frequently discussed test results with students, parents, other teachers, or with all of them.

Contrasting the Test Discussion Score with the Test Attitude Index, we can note that the Test Attitude Index reflected feelings on

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*The three items appear in their questionnaire setting as items 11, 14, and 18 of Appendix D of Hastings, et al. (1961), of which see also Chapter VII for further details.

Table VI-3. **Second Project: Percentages of Faculty Members in Indicated KIT Levels (fall 1959) Who Fell into Indicated Ranges on the Test Attitude Index (spring 1960).**

	Test Attitude Index					
KIT	0-10	11-12	13-14	15-20	Total	N
36-54	16	24	31	29	100	153
26-35	29	26	31	14	100	235
10-25	39	26	22	13	100	114
	27	26	29	18	100	502

Chi-square 28.95

6 df, $P < .001$

the part of the respondent about what he would like to see happen in his school in regard to the application of tests and dissemination of their results. It asked the respondent what he thought ought to be done. It reflected acceptance-rejection or approach-avoidance tendencies and, in this sense, was close to the common meaning of "attitude." The Test Discussion Score, on the other hand, was less free of reality pressure from the immediate situation. It did not ask the respondent what he would like to do, but rather what he did do. The Test Discussion Score, accordingly, was much closer to a report of actual practice than was the Test Attitude Index. Even so, the Test Discussion Score no doubt was affected somewhat by what the respondent saw himself ideally doing. The items, as in the above illustration, asked for a report of actions which would be impossible to remember in detail and likewise impossible to characterize precisely by such rough categories as "frequently," "sometimes," etc. The Test Discussion Score, in sum, might best be considered to be roughly halfway between an index of attitude in the sense of a readiness on the one side, and an objective index of practices in being, on the other. The mean of the scores taken in the spring of 1960 was 4.7.

Table VI-4 shows that KIT was significantly related to the Test Discussion Score, with faculty members high on the KIT having been the more likely to report more frequent talking about test scores with parents, students, and other teachers. Table VI-5 shows that a positive and significant relation occurred also between the Test Discussion Score and the Test Attitude Index.

Table VI-4. Second Project: Percentages of Faculty Members in Indicated KIT Levels (fall 1959) Who Fell into Indicated Ranges on Test Discussion Score (spring 1960).

	Test Disc. Score				
KIT	0-3	4-6	7-9	Total	N
36-54	22	35	43	100	153
26-35	42	43	15	100	235
10-25	47	46	7	100	114
	37	41	22	100	502

Chi-square 66.06

4 df, P < .001

Table VI-5. Second Project: Percentages of Faculty Members in Indicated Levels of Test Discussion Score ("TDS") Who Fell into Indicated Ranges on Test Attitude Index (spring 1960).

	Test Attitude Index					
TDS	0-10	11-12	13-14	15-20	Total	N
7-9	15	21	30	34	100	186
4-6	32	24	28	16	100	207
0-3	29	30	30	11	100	109
	27	26	29	18	100	502

Chi-square 31.64

6 df, P < .001

Guidance Communication. We now turn to a measure of communication about the general area of guidance and testing -- a measure not taken solely from a self-report, but one verified by other persons in the school. In fall 1959, a complex questionnaire on the communication links in the school was administered to small groups of respondents by interviewers working in pairs. The questionnaire asked the respondents how frequently they conversed with every other person in the school and about what topics. The assessment of each person's communication link with each of the others was based upon the compared reports of the two persons involved. The final coding given to the communication between each pair of persons represented the approximate number of conversations per week the pair held about guidance and testing. Each person, in other words, was assigned a number in respect to every other person, telling roughly how many conversations he held per week with the other person.

This has been a very quick description* of the coding of the communication links; the brevity seems permissible since for present purposes the data on each person's communication with others were employed quite simply: the codes each person was given in respect to others were summed over all the other persons. The result was a score which indicated the equivalent number of persons with whom the respondent conversed at least once a week about guidance and testing. We called this the

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*For a complete description, see Chapter VIII of Hastings, et al. (1961).

Guidance Communication Score. This score is more a measure of practice than of attitude and is reasonably objective in that the final score was taken not only from the individual with whom it was associated, but was corroborated by all of the other persons involved.

The mean Guidance Communication Score in fall 1959 was about 12.5 conversations per week about guidance and testing. The means of the schools ranged from 6.0 to 18.3.

Table VI-6 shows that persons higher on the KIT were more often those who carried on more frequent conversations with colleagues about guidance and testing, and inversely. Table VI-7 shows a positive relation between the Guidance Communication Score and the Test Attitude Index, and Table VI-8 shows a positive relation between the Guidance Communication Score and the Test Discussion Score.

Conclusions. It was a hypothesis of the Second Project that all of these variables would turn out to be positively related to each other: score on Knowledge and Interpretation of Tests, Test Attitude Index, Test Discussion Index, and Guidance Communication Score. As Tables VI-3 through 8 show, this is what happened.

This result is not due to anything about the way the data were collected;* rather, the interrelations among these variables portray certain tendencies in the faculties toward talking and acting which

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*There is, it is true, some lack of experimental independence between the Test Discussion Score (since it can include talking with teachers about test results), and the Guidance Communication Score (since it can include talking with other teachers about testing).

Table VI-6. Second Project: Percentages of Faculty Members in Indicated KIT Levels Who Fell in Indicated Ranges on the Guidance Communication Score (fall 1959).

	Guid. Com'cat'n Score				
KIT	0-8	9-14	15-65	Total	N
36-54	24	34	42	100	158
26-35	40	34	26	100	248
10-25	46	39	15	100	127
	37	35	28	100	533

Chi-square 30.69

4 df, P < .0001

Table VI-7. Second Project: Percentages of Faculty Members in Indicated Levels of Test Attitude Index ("TAI," spring 1960) Who Fell into Indicated Ranges on the Guidance Communication Score (fall 1959).

	Guid. Com'cat'n Score				
TAI	0-8	9-14	15-65	Total	N
14-19	25	32	43	100	211
11-13	36	37	27	100	238
0-10	44	33	23	100	163
	34	35	31	100	612

Chi-square 24.29

4 df, P < .001

Table VI-8. Second Project: Percentages of Faculty Members in Indicated Levels of Test Discussion Score ("TDS," spring 1960) Who Fell into Indicated Ranges on the Guidance Communication Score (fall 1959).

	Guid. Com'cat'n Score				
TDS	0-8	9-14	15-65	Total	N
7-9	9	22	69	100	146
4-6	34	41	25	100	261
0-3	53	35	12	100	206
	34	35	31	100	613

Chi-square 153.44

4 df, P < .0001

existed instead of other tendencies which could have existed. For example, knowing a lot about testing does not require a person to be more receptive than others toward the use of tests in the school, yet in general this was the tendency found (Table VI-3). Again, being receptive toward wider use of tests does not require a person, himself, to be one who frequently discusses test results with parents; yet again, this was the general tendency (Table VI-5). In point of fact there were some people, contrary to the general trend, knowledgeable about tests who were not receptive to their use in the school; and there were people receptive toward the use of tests in the school who did not talk much about test results with parents, students, or other teachers. But these persons outside the general trend will be discussed in the next section.

The point here is that the faculty members with the relatively greater knowledge about testing were more likely to be in favor of disseminating test results and to wish this to be done in careful and constructive ways, not merely by broadcast methods. They were more likely to engage in discussion about test results with students, parents, and other teachers; and they more often communicated with colleagues about matters of guidance and testing generally. Although this is simply a correlational finding, there is surely some degree of causality here, or at least facilitation. Surely a more articulated cognitive structure about testing enables one more easily to visualize ways in which the virtues of tests can be seized upon and their dangers counteracted. Surely some technical knowledge about testing makes it more likely that one will have something to talk about with parents, students, and other teachers in regard to testing. In addition to such facilitations, knowledge produces concern; it gives the ability to see contradictions, gaps, and needs, and therefore opens the individual to becoming motivated in respect to the matters known about.

Consequently, it seems reasonable to conclude that people with technical knowledge about testing are more likely than people without such knowledge to engage in discussions with colleagues, students, and parents about testing, to exhibit receptive attitudes toward the use of tests, and to be able to suggest constructive ways of turning testing to better use. A similar conclusion, it seems to me, would apply equally well to other aspects of guidance counseling. It is for these reasons that the first recommendation listed earlier, and directed to administrators who wish to take steps toward increasing the effectiveness of their guidance services, was to obtain at least two persons very highly trained in guidance and testing.

The reason for saying "at least two persons" is very simple: merely that a lone individual trying to make changes within an organization faces an almost impossibly uphill task. He needs at least one kindred spirit working with him toward the same goals with whom to share the work and the frustrations: he needs "moral support." Though well known, this principle is too often ignored. The excuse seems to be that having one person working at a needed task is better than having none; but with certain types of tasks this is not true. One such task, in my opinion, is that of building an effective guidance program.

Effects of Spreading Technical Knowledge

Turning to my second recommendation, there is one very obvious reason that classroom teachers are going to have to learn more about guidance and testing; and that is the sheer shortage of highly trained experts in guidance and testing. There are not enough of these people to go around, and there will not be enough for some years to come.

When I say there are not enough experts to go around, I do not necessarily mean that there will not be enough to meet the demand. If the history of other movements in American education in recent decades is any guide, the present clamor for guidance counselors will taper off long before enough of them are trained (and sufficiently trained) to do the job demanded of them. Consequently, the time will be long in coming when, on the vital routes of communication between school and community, there will be so many counselors plying their trade that they will need to look for little help from knowledgeable teachers.

But there is another excellent reason for improving knowledge among teachers about guidance and testing. A lone expert in guidance, or even a staff of experts, cannot do the best job if what the expert is trying to do is not understood and backed up by the faculty as a whole. Teachers must refer students intelligently to the counselors, counselors must feel free to arrange conferences between students and subject-matter specialists, and the like. Such interaction cannot be conducted efficiently in a shotgun manner, but must be done intelligently on the basis of adequate understanding.

We saw earlier that technical knowledge of testing, a receptive attitude toward the judicious dissemination of test results, and the tendency to talk with others about test results were variables which were all positively related to each other (Tables VI-3, 4, 5). However, as is always the case, the relations were not perfect. There were some people who were exceptions to this rule. Since everyone was not behaving just alike, it was possible to look further into the data for some differences among faculty members. These differences will emphasize the help or hindrance teachers can give to the work of the counselor.

What kind of talking about tests is done by people with high (or low) technical knowledge? Who typically talks favorably (or unfavorably) about test use? To answer these questions, we rearranged the data to produce Tables VI-9 and 10.

Those faculty members who reported the most frequent discussion of test results with parents, students, or other teachers were not a mere motley. Table VI-9 shows that persons high on the Test Discussion Score tended (significantly) to be (a) knowledgeable persons with a receptive attitude toward the use of tests or (b) persons of low knowledge with a comparatively unfavorable attitude toward the use of tests. Those persons who showed up clearly contrary to this rule (that is those persons high in knowledge but in the lowest attitude bracket or those low in knowledge but in the highest attitude bracket) comprised only 12 persons (or 11 percent) of the 109 in the upper sub-table of Table VI-7 in contrast to the 23 (or 21 percent) who would have been expected by chance. The most talkative people (those in the upper sub-table) are those who deserve our attention since the relation between KIT and Test Attitude did not come to significance among the less talkative:

Table VI-9. Second Project: Percentages of Faculty Members in Indicated Levels on Knowledge and Interpretation of Tests (KIT) Who Fell into Indicated Ranges on the Test Attitude Index, Shown Separately within Levels of the Test Discussion Score.

Test Discussion Score of 7 to 9 (high)

	Test Attitude Index				
KIT	0-12	13-14	15-19	Total	N
42-55	19	28	53	100	32
34-41	30	37	33	100	43
10-33	59	23	18	100	34
	36	30	34	100	109

Chi-square 15.24

$P < .005$

Test Discussion Score of 4 to 6 (middle)

	Test Attitude Index				
KIT	0-10	11-13	14-19	Total	N
35-55	26	42	32	100	62
28-34	32	34	34	100	76
10-27	39	32	29	100	69
	32	36	32	100	207

Chi-square 3.12

NS

Test Discussion Score of 0 to 3 (low)

	Test Attitude Index				
KIT	0-10	11-12	13-19	Total	N
33-55	37	29	34	100	65
27-32	24	31	45	100	62
10-26	25	31	44	100	59
	29	30	41	100	186

Chi-square 3.39

NS

Table VI-10. **Second Project: Percentages of Faculty Members in Indicated Levels of Test Discussion Score (TDS) Who Fell into Indicated Ranges on the Test Attitude Index, Shown Separately within Levels of Knowledge and Interpretation of Tests (KIT).**

Score on Knowledge and Interpretation of Tests of 36 to 55 (high).

	Test Attitude Index				
TDS	0-11	12-14	15-19	Total	N
8-9	17	32	51	100	47
5-7	27	47	26	100	51
0-4	41	46	13	100	54
	29	42	29	100	152

Chi-square 19.60

P < .001

Score on Knowledge and Interpretation of Tests of 29 to 35 (middle).

	Test Attitude Index				
TDS	0-11	12-13	14-19	Total	N
6-9	30	27	43	100	63
3-5	42	34	24	100	62
0-2	38	27	35	100	48
	36	30	34	100	173

Chi-square 5.00

NS

Score on Knowledge and Interpretation of Tests of 10 to 28 (low).

	Test Attitude Index				
TDS	0-10	11-12	13-19	Total	N
5-9	46	19	35	100	57
3-4	34	31	35	100	58
0-2	37	27	36	100	62
	39	26	35	100	177

Chi-square 2.60

NS

that is, those with the middle and low scores on Test Discussion. Since the people who do the most talking are the people who are usually going to be the most influential, it behooves the principal to try to increase the technical knowledge of faculty members, with the hope that receptive attitudes will accompany the increase in knowledge. The evidence here is again in terms of the use of test results, but the argument is to any aspect of guidance, by analogy.

Table VI-10 looks at these same data by slicing them another way. The upper sub-table of Table VI-10 shows that the high scorers on the KIT tend to be either (a) persons who do a lot of talking about test results with a receptive attitude toward their use or (b) persons who are not receptive toward the use of test results but do comparatively little talking about them. (The clear exceptions here comprise only 15 out of 152 persons, or 10 percent, in contrast to the 29, or 19 percent, who would have been expected by chance.) If one is trying to put into effect a new or altered program for the use of tests (or for guidance generally), this is exactly the kind of behavior on the part of faculty one would most desire; namely, a lot of talking on the part f those who are knowledgeable and very little on the part of the ignorant. But note that the tendency was significant only among those faculty members scoring high on the KIT. This is another way to point to the advantage of increasing the knowledgeability of the faculty generally in matters of guidance and testing.

Of course, one must again sound the note of caution because of the fact that one is making a causal argument on the basis of a correlational finding. More knowledge might not produce the kind of desirable behavior we see dominant in Table VI-10. Yet the risk seems worth taking.

If the general level of technical knowledge in the faculty is to be raised, the counselors in the school are in a particularly good position to help do it since they must deal with teachers daily in any case. Furthermore, there is evidence that a general climate of welcome exists for this kind of instructional service from counselors. This will be explained in the next section.

Counselor Effectiveness and Time at the School

Having argued that the general effectiveness of guidance in the school can be facilitated if the general level of technical knowledge among the faculty is increased and having suggested that counselors themselves can be of important help in this process, I must now turn to some evidence that supports this latter claim.

Climate. How much of an uphill struggle would it be if counselors were to undertake some kind of program for increasing the knowledge of teachers in their schools about guidance and testing? One of the interesting findings resulting from the Second Project was that while counseling individual students on curricula and occupational choices was agreed by the faculties of the 28 schools to constitute the "core role" of the counselor, faculties in many schools expressed a desire for the counselor to spend more time working with teachers. There existed an important body of opinion that counselors should give more direct help to teachers than they do at present on matters of guidance and test interpretation.

The data for this finding came from a questionnaire containing 39 items describing possible duties of the counselor. An actual counselor in each school was named at the beginning of the questionnaire. The respondent was asked two questions about each item: (a) Is this person now actually being expected to do this thing in your school? (b) Is this an appropriate thing for him to be doing -- is this something he ought to do? For each item a count was made of the number of schools in which a majority of the faculty said the item was not now expected of the counselor but in which, at the same time, a majority of the faculty said it was something he ought to do. The "isn't but ought to" items that turned up in 6 or more of the 28 schools are shown in Table VI-11. Since there were many items among the 39 which did not concern counselor-teacher communication,* these results indicate that such communication was uppermost in the minds of faculties as something which should be done more than it was being done. Although a majority of the faculty in six (or even eleven) schools out of 28 is far from a unanimous opinion, this finding from this heterogeneous group of 28 schools can at least be taken to argue that there is a reasonable chance in most localities that a reasonably sized group of teachers exists who would welcome some sort of informal instruction from counselors about the "aims, techniques, and values" of guidance.

Time at school. Granted that it is practicable, at least in some localities, for the counselor to undertake to communicate technical information to teachers, what are the conditions under which counselors do communicate with teachers? In an earlier section we saw that technical

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*See Chapter V of Hastings, et al. (1961) for the complete list of 39 items and for other findings.

Table VI-11. Second Project: Items of the Counselor's Role Which, in at Least Six Schools out of 28, a Majority of the Faculty Said the Counselor Was Not Now Doing but Ought to Do.

Item	No. of Schools
Invite teachers to group meetings to learn more about the aims, techniques, and values of counseling.	11
Conduct meetings scheduled by authority of the principal in which teachers can learn more about the interpretation of tests.	8
Hold small group faculty meetings to discuss the particular needs of various departments (such as Science, Industrial Arts, Language, etc.) in regard to the kinds of tests that would be useful.	8
Invite teachers to group meetings to learn more about the interpretation of tests.	7
Conduct meetings scheduled by authority of the principal in which teachers can learn more about the techniques, purposes, and values of counseling.	7
Confer with individual teachers regarding the kinds of tests they might need in their own work.	7
Conduct small group faculty meetings to discuss the interpretation and use of tests to help solve problems specific to that group (e.g. science department, language department, etc.).	6
Conduct a general faculty briefing meeting after test data are received and discuss the results and possible uses in general terms.	6

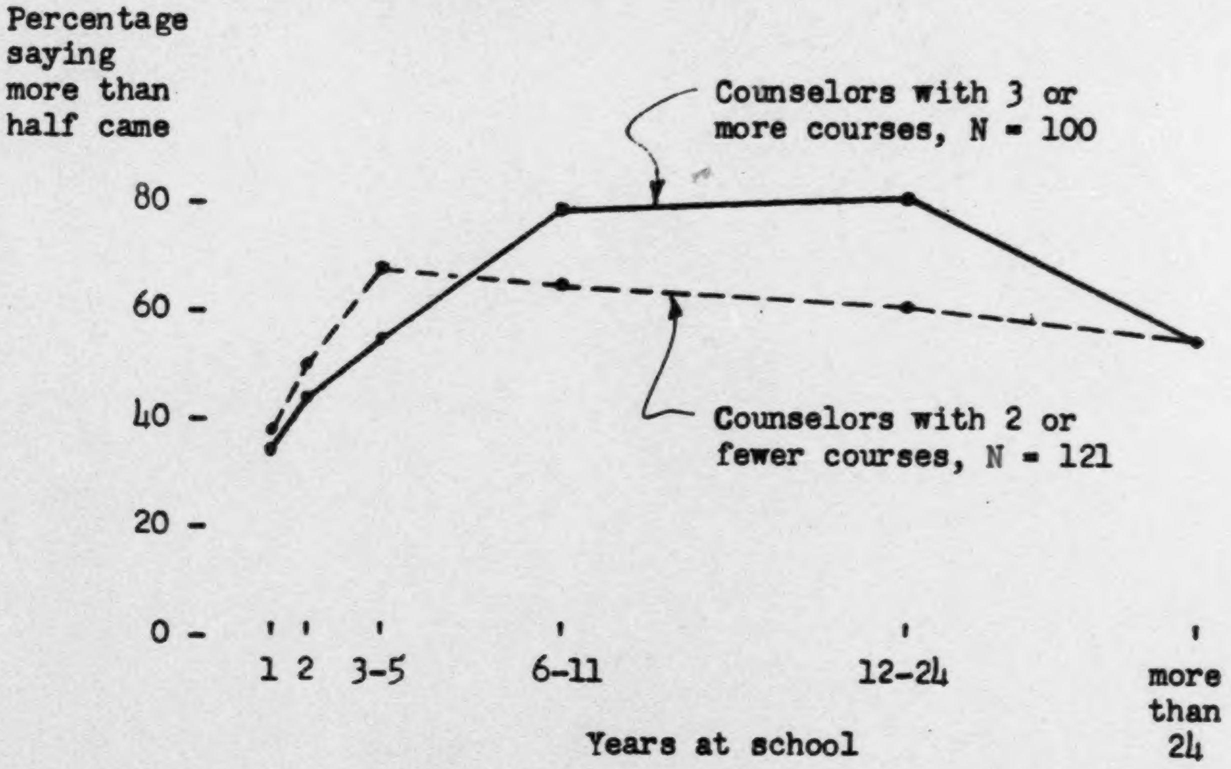
knowledge (KIT) and receptiveness toward using tests (Test Attitude Index) were associated with an individual's frequency of communication with others about guidance and testing (Test Discussion Score and Guidance Communication Score). As to counselors, our studies also suggest that another important condition is the length of time the counselor had been at the school.

One counselor (if there was one) in every school in the main study (First Project) was sent a questionnaire which included the following three questions:

> "How long have you been at this school (either as counselor or as teacher)?"
>
> "In the course of a year, approximately how many of the teachers take time out to come to you and request information about their students?"
>
> "How much formal training in the technicalities of testing ...have you yourself had?"

The responses to these questions enabled us to chart the proportions of teachers who requested information from the counselor against the length of time the counselor had been at the school. Since we had also found that amount of technical knowledge was associated with communication about technical matters, we charted the relation for counselors who had had three or more courses in testing and also for those who had had fewer courses. The results of this charting are shown in Figure VI-1. The trend over time was significant beyond the .03 level for the counselors with three or more courses (chi-square 14.39, 6 df); the trend for all counselors with number of courses controlled was significant beyond the .07 level (total chi-square 19.91, 12 df). For

Figure VI-1. Percentages of Counselors at School Indicated Numbers of Years Who Said that More than Half the Teachers Came to Them for Information About Their Students, Shown Separately for Counselors Who Had Had Three or more Courses in Testing and for Counselors Who Had Had Fewer.



the point under discussion, the important feature of Figure VI-1 is that the typical amount of communication was not reached by the counselor until perhaps the fourth or fifth year of his stay at the school. In other words, a counselor who leaves the school after two or three years is probably leaving before his maximum opportunity to influence the faculty has been reached. Another interesting feature of Figure 1, and a feature consistent with findings described earlier, is that the communication of counselors having three or more courses in testing rose higher than that of counselors having fewer courses and fell back later.

There are some data from the Second Project which tell a similar story. In an earlier section I mentioned a more inclusive (and at the same time a more precise) measure of communication about guidance matters which we used in the Second Project. To review briefly, every respondent in each of the 28 schools was given a list of the faculty and asked two questions about every name: (a) how often he talked with the person, regardless of topic, and (b) what portion of his conversation with the person was devoted to matters of guidance, counseling, and testing. The answers were converted to a measure of connectedness among faculty; namely, equivalent-conversations-per-week about guidance matters.

In each school, attention was focused upon one particular counselor. It was found that the counselors differed in the extent of their communication with the rest of the faculty. For example, in one instance a counselor had connections with only 3 out of the 16 persons in the sample of the faculty; in another, a counselor was connected to 12 out of 16 persons. The data were analyzed to determine whether any relation existed between the number of years the counselor had been at the school and the spread of his communication among the faculty. Two statistics were computed for each counselor: an index of his connectedness with other faculty members, and an index of the connectedness among the faculty as a whole. Dividing the first by the second yielded a ratio which indicated whether the counselor was exceeding or falling behind his faculty in communication with teachers on matters of guidance and testing. Following is a summary of these ratios for 26 counselors,* according to the number of years they had been in their schools:

Counselor's year at school	No. of couns.	Ratio
2-4	9	1.66
5-10	10	2.32
11-16	7	2.34

The mean ratios are greater than one, which indicates that the connectedness of the counselor was greater, on the average, than that of the rest of the faculty. This is only to be expected. The important point here is that this ratio increases much like the percentage increase among teachers who go to the counselor for help with their students: the counselor needs about 4 or 5 years to reach maximum communication with the rest of the faculty about professional matters.

In summary, many faculty members in Illinois high schools expressed a desire for more communication with the counselor concerning his professional area; but the typical counselor seems to spend about 4 or 5 years acquiring his eventual communication links with the faculty. On the basis of these data, it seems a school does not get its "money's worth" from a counselor unless he stays a good number of years. Consequently, my third recommendation was to keep each counselor on the staff long enough to benefit from the period when he becomes maximally influential.

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*The two schools in which the counselor was spending his first year were omitted from this tabulation because the communication assessment was taken early in the school year and therefore the counselor's contribution to the "mutual" method would have been unreliable.

Communication and Influence

The argument so far has been that communication between counselor and teacher would have some active result, such as spreading knowledge from the counselor to the teacher. However, the evidence has been more inferential than direct. Some preliminary data from the Second Project offer a somewhat more direct demonstration of the effects of communication between counselor and faculty; and I shall now turn to these data in support of my fourth point, that the usefulness of the counselor will be enhanced if communication between counselor and faculty is made easy.

The motivation of the Second Project was a summer institute in guidance held at the University of Illinois in 1959. Twenty-eight trainees attended the institute, and we (see Hastings, et al., 1961) undertook to follow these trainees back to their schools to ascertain what we could of the effects they would have among their faculties.

Shortly after the trainees had returned to their several schools early in the fall of 1959, we asked the faculty in each school to respond to an inventory or a list of duties which the trainee might have as a counselor in that school. This same inventory of 39 items was given to the faculties again in the fall of 1960, a year later.

In this way, we were able to obtain a measure in each school of the change in the perceptions among the faculty concerning the role of this newly trained counselor. Measures of change were obtained only from 20 schools since eight of the trainees had left their schools by the fall of 1960.

In the fall of 1959 we found that most faculty members responded with uncertainty to many of the items of the questionnaire describing possible duties of the counselor. Furthermore, faculties in the 20 schools did not show, on the average, any more certainty after the passage of a year concerning what was being expected of the trainees in their schools, nor did they show any increase in certainty concerning what ought to be the trainee's duties in the school. However, the outcome of our research was not as bleak as this. Although, as a total group, the faculties of these 20 schools showed the lack of change I already have mentioned, it nevertheless was true that certain schools did show considerable change and certain trainees had considerable influence in their schools. These changes were associated with (a) clarity of knowledge and opinion on the part of the trainee and with (b) higher levels of communication within the faculty about guidance and testing.

The first factor (clarity of knowledge and opinion on the part of the trainee) fits in with my earlier point about getting highly trained persons as a first step; no more will be said about it.* The second factor (higher levels of communication within the faculty) is the finding supporting my fourth point, that of opening up the communication channels within the school.

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*For the evidence see Chapter IX of Hastings, et al. (1961).

Communication density and increase of certainty. Looking again at the frequency of communication about guidance within each pair of persons in a faculty, we were able to characterize each school according to its density of communication about guidance and counseling. This was done simply by adding the conversations per week over all pairs of faculty members in the school and dividing by the number of pairs in the school. The resulting figure for average number of conversations per week was the figure we called density of communication concerning guidance and counseling. (The range over schools was from .15 to .86.) Our hypothesis then was that the faculties of those schools having higher communication densities would show the greater increase of certainty about the trainee's role over the course of a year; that is, they would develop opinions about the counselor to a greater extent than would faculties with lesser communication densities.

To test this hypothesis the simple median test was used. The twenty schools were divided at the median communication density and also at the median increase in certainty during the year's period. (Mean changes in schools in respect to certainty about what the counselor was being expected to do ranged from -6.4 to 4.3 items; mean changes concerning what he ought to be doing ranged from -1.2 to 4.3 items.) The results are shown in Table VI-12, where it can be seen that the hypothesis was borne out. Those schools with the higher communication densities were more active during the year in arriving at firmer opinions about

Table VI-12. Second Project: Relation between Communication Density in the School and Increase of Certainty about the Counselor's Role.

Communication density of school	Increase in certainty on expected role*			Increase in certainty on appropriate role**		
	Schools below median	Schools above median	Total	Schools below median	Schools above median	Total
Above median	2	8	10	3	7	10
Below median	8	2	10	7	3	10
Total	10	10	20	10	10	20

* Relation significant at the .012 level (one tail) by Finney's (1948) tables.

Finney, D. J. The Fisher-Yates test of significance in 2 x 2 contingency tables. Biometrika, 1948, 35 (Parts I and II), 145-156.

** Relation significant beyond the .025 level (one tail) by the corners test, for which see Mood (1950, pp. 410-414).

Mood, A. McF. Introduction to the Theory of Statistics. New York: McGraw-Hill, 1950.

what the new counselor actually was doing and also about what he ought to be doing.

Communication connections to counselor and increase of certainty. The analysis of the previous section, although it dealt with certainty about the role of the new counselor, did not deal with communication centered upon the counselor. In another analysis, we examined the communication connections in each faculty to ascertain how directly or indirectly each faculty member was linked to the new counselor in terms of conversations per week about guidance and testing. Calling two persons "connected" if they engaged in at least one conversation per week about guidance and counseling and "unconnected" otherwise, we classified all respondents (except the counselor) according to the following scheme:

1. Respondent was connected directly to the counselor, and the counselor himself was mutually interconnected with at least three other persons.
2. Respondent was connected directly to the counselor, but the counselor was not mutually interconnected with as many as three other persons.
3. Respondent was connected in two steps to the counselor, the first step being a link to a person who was one of three or more persons with whom the counselor was mutually interconnected.
4. Respondent was connected in two steps to the counselor, but not through someone who was one of three or more persons with whom the counselor was mutually interconnected.
5. Respondent was on a connected path to the counselor but more than two steps removed.
6. Respondent was not on a connected path to the counselor. (A few persons in this category were in very small connected groups which were themselves not connected to the counselor, but most persons in this category were isolates unconnected to anyone.)

These categories, we felt, represented successively less and less easy positions from which to communicate with the new counselor.*

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*It will be noted that some steps differ from their neighbors only in the fact that the next person in the path is or is not a member of an interconnected group. On the basis of other evidence (see Chapter VIII of Hastings, et al., 1961 or Runkel, 1962) we felt that communication flowed more easily from one person to another if they were both interconnected with still others.

Runkel, Philip J. Replicated tests of the attraction-communication hypothesis in a setting of technical information flow. Amer. sociol. Rev., 1962, 27, 402-408.

Our hypothesis now was that the more remote the connectedness of a faculty member from the counselor, the less likely he would be to become more certain during the year about the counselor's role. Pooling members of all schools (but of course still figuring connectedness in respect to the counselor in each person's own school) we have the results shown in Table VI-13. There we see that the mean amount of change in certainty shown by the persons in the several categories of connectedness to the counselor corresponded roughly but significantly with the closeness of connection to the counselor. We used tau as our measure of rank correlation between the communication categories and the degrees of change in certainty about the counselor's role, and the tau values were significant at acceptable levels in each part of the table. In other words, amount of increase in certainty about the counselor's role was greater when the faculty member was in closer communication with the counselor.*

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*This is not to say that the counselor typically succeeded in persuading the faculty member to his own point of view about his role. For the complexities of this question see Chapter IX of Hastings, et al. (1961).

Table VI-13. Changes in Certainty about the Counselor's Role on the Part of Faculty Members Having Closer and More Distant Communication Connections to the Counselor.

		EXPECTED ROLE		
Communication category with counselor	N	Mean change in certainty	Rank of change	P-value from Table Q of Siegel*
1 and 2	96	.74	2	
3	57	.82	1	
4	53	.63	3	
5	49	.60	4	
6	67	-3.87	5	
Tau with communication category			.47	.042
		APPROPRIATE ROLE		
1	77	1.66	1	
2	16	1.53	2	
3	57	.89	4	
4	51	.55	5	
5	53	1.11	3	
6	67	- .63	6	
Tau with communication category			.73	.028

*Siegel, S. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill, 1956.

In summary, we have seen that the Second Project provided evidence that faculty opinions about the new counselor's role became more structured (they marked fewer items "uncertain") in schools where communication links were more dense; and the faculty members who most increased their certainty were those who were in the closest communication with the counselor. In brief, the more open the communication channels, the more information can be spread and opinions formed. The matter of how to make it likely that the opinions formed will be helpful to the guidance program is more complicated, of course. This depends on the groundwork which is done before counselors are brought into the school, on the competence of the counselors themselves, on the state of knowledge in the faculty when the program is started, on the manner in which duties are parcelled out, and on many other matters for which there is not space here properly to discuss.

Effects of Receiving Attention

My fifth recommendation to administrators was to pay attention and to draw attention to the guidance activities and guidance people in the school. To this it may be objected that while people like attention, it may not follow that they perform better under the flattery of attention. My counter-argument is that I am merely proposing that administrators let the Hawthorne effect work for them; if the direction for action can be taken from some knowledgeable counselors on the staff, then extra efforts will be turned into that direction if the administrator lets the faculty know that the eyes of expectation are upon them. In order to present evidence for this point, it will first be necessary briefly to describe the Third Project.*

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*Reported in Runkel, Hastings, and Damrin (1961).

The Third Project. The third sample was selected for the purpose of making comparisons with the samples of the First and Second Projects, and certain features are therefore important. First, the sample consisted of 50 schools selected randomly from the high schools of the state; second, the bulk of the faculty in each school was solicited in each case; and third, information was obtained about the amount of recent training in the fields of guidance and testing received through faculty attendance at institutes. To check the accuracy of this latter information, we sent a post card to the principal of every high school in the state asking how many persons in his school had attended an institute in guidance, counseling, testing, and/or measurement during the period June 1959 to September 1960 (roughly the period covered by the Second Project). When the returns were in, we found that the average number of persons who had attended institutes from the 50 sampled schools was almost identical with the average number in the state as a whole.

Data collection from the schools of the Third Project was done entirely by mail, following closely the procedures used in the First Project (see Chapter II). Preliminary letters and then packages of questionnaires were sent to the principals of the schools. In the case of most schools, we requested that the entire faculty participate. In the case of two schools with 79 and 95 faculty members respectively, we asked for two-thirds of the teachers; and in the case of three schools of more than 100 faculty members, we asked for one-half the teachers. In every case, all of the administrators and all counselors were solicited. The sizes of the Third Project faculties ranged from seven to 171. The percentages of questionnaire returns are shown in Table VI-14. In the end, forty-seven schools participated in the study.

Comparing the Second and Third Projects. Many items on the questionnaires used in the fall of 1960 with the Second and Third Projects were the same. Furthermore, we knew that every school in the Second Project had sent at least one (though in most cases only one) person to a training institute in counseling during the summer of 1959; and we obtained information from the schools of the Third Project (which contained no schools which were in the Second Project) concerning how many faculty members had attended institutes in guidance between June 1959 and September 1960. These data enabled us to compare responses of faculty members in the two samples concerning attitudes and practices about guidance in respect to whether a recently trained counselor (or more than one) was a member of the staff. Putting it another way, these data gave us a method, even if admittedly a rough method, of finding out whether a faculty as a whole could be affected in their attitudes toward guidance by giving training only to one or a small fraction of its members.

The Second Project was devoted entirely to one particular summer institute in guidance and testing and to the faculties of the schools to which the trainees returned. For a precise comparison of the outcomes of this institute with outcomes of other institutes, it would

Table VI-14. Third Project: Percentages of Questionnaire Returns.

Questionnaires sent to:	Number sent	Percent returned filled out	Number reached	Percent returned from those reached
Schools	50	94		
Administrators	70	77	61	89
Counselors	37	86	33	97
Teachers	1103	77	973	87

have been necessary to invest the same amount of time and money multiplied by the number of institutes to be compared with the first. Money was not available for a study on such a grand scale. The method which we used to locate schools containing faculty members recently returned from institutes roughly comparable to the summer institute of the University of Illinois was very imprecise, but also very inexpensive.

For purposes of the present analysis, each school in the Third Project was put into one of three training classifications: (1) 14 schools which sent more than one person to an institute during the designated period, (2) 16 schools which sent one person, (3) 17 schools which sent no one. The schools of the Second Project sample, of course, all sent at least one person to an institute and some sent several. However, because we were interested in the effects of the particular institute in which the Second Project schools all participated, we did not apply the above categories to the Second Project schools; they will be considered as a single separate group. In other words, our analysis made use of four subgroups; the Third Project schools divided into the three "training classifications" listed just above and the Second Project schools taken as a single group.

Results. The analysis of the Third Project compared the three training classifications of schools with each other and compared the Second Project schools with the three classifications of Third Project schools on a great many items. Table VI-15 does not describe all the items on which comparisons were made but describes all the items on

Table VI-15. Third Project: Comparisons of Responses to Various Items between Training Classifications of Schools in the Third Project (TP) and between Schools of the Third Project and Schools of the Second Project (SP), Fall 1960.

Comparisons of TP sub-samples	Comparisons of SP with TP
Higher average education in schools sending more persons to institutes.	SP had higher average education than TP.
More courses in testing in schools sending more persons to institutes.	SP had fewer courses in testing than TP(1)* or TP(> 1)**.
No relation.	SP more frequently felt information in files to be sufficient than did TP.
No relation.	SP more frequently discussed test results with parents.
No relation.	SP more frequently discussed test results with students.
No relation.	SP more frequently discussed test results with parents, students, and other teachers.
No relation.	SP less frequently preferred test results to be made available to teachers in administrative office.
No relation.	SP more frequently preferred that an appointed person discuss test results with teachers.
TP(> 1)** more frequently preferred descriptive test results be given teacher to keep.	SP more frequently than TP preferred descriptive test results be given teacher to keep.
TP(> 1)** less frequently preferred group meetings for learning about test results.	SP more frequently than TP(1)* or TP(> 1)** preferred group meetings for learning about test results.
No relation.	SP referred more students for vocational counseling.
No relation.	SP referred more students for educational counseling.

Table VI-15, continued.

Comparisons of TP sub-samples	Comparisons of SP with TP
No relation.	SP referred more students for counseling about college goals.
More referrals for counseling concerning academic problems in schools sending more persons to institutes.	SP referred more students for counseling concerning academic problems.
More referrals for counseling concerning disciplinary problems in schools sending more persons to institutes.	SP not different from TP as a whole, but referred _fewer_ students for disciplinary reasons than TP(> 1).** Among teachers only, SP referred _fewer_ than TP as a whole.
No relation.	SP showed less agreement with experts on counselor's appropriate role.

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* Faculty members in Third Project schools which sent one member to a training institute in guidance between June 1959 and September 1960.

** Faculty members in Third Project schools which sent more than one member.

which the Second Project schools differed significantly from the Third Project schools.*

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*For further detail see Chapter IV of Runkel, Hastings, and Damrin (1961).

The first thing notable about Table VI-15 is that while all the listed items showed differences between the schools of the Second Project and those of the Third, only four items having to do with guidance attitudes or practices showed differences among the training categories of schools in the Third Project. (The first two items in the table are background data on training rather than guidance attitudes or practices which might result from training.) In other words, there is very little evidence indeed in the left-hand portion of Table VI-15 to indicate that sending faculty members to guidance institutes had any effects among Third Project schools on the attitudes and practices of the other faculty members.*

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*Chapter IV of Runkel, Hastings, and Damrin (1961) describes a further check of the effectiveness of institute training received by members of the Third Project schools in changing test attitudes and practices. This was done by analyzing the relations among variables within First Project (1959) and Second Project (1960) sub-groups of schools, divided as before according to number of persons sent to guidance institutes. No significant differences in the shapes of the relations occurred, indicating that institute training did not bring about distributions of faculty responses differing from the responses of faculties in comparable schools before the institute training was received.

However, turning to the right-hand portion of Table VI-15, we find that the faculties of the Second Project schools (those which each sent a member to the 1959 summer institute at the University of Illinois) differed from the faculties of the Third Project schools in a remarkable number of respects. Furthermore, almost all of the differences were in a direction most guidance people would agree to be desirable.

In comparison to the Third Project subgroups, members of the Second Project schools (1) were more satisfied with the information in their files about students, (2) more frequently discussed test results with students, parents, and other teachers, (3) more frequently preferred to transmit test results to teachers in informative and helpful ways, and (4) referred more students to counselors for all purposes except discipline -- for this purpose they referred fewer. This last finding deserves special note since on this question, that of sending students to the counselor for disciplinary reasons, the responses among the Second Project people tended in a direction opposite to that in the Third Project; but the direction taken by the Second Project was the direction recommended by the instructors at the institute attended by one member from each of the Second Project schools!

Let me make this point very clear since it clinches the argument that the schools containing alumni of the Illinois institute were indeed behaving differently from the other schools, even differently from schools containing alumni of other institutes. For most kinds of counseling (vocational, etc.), teachers in Third Project schools where more faculty members had been to training institutes tended to send more students to the counselor than teachers did in schools where fewer colleagues or no one had attended a training institute in guidance. The schools participating in the Illinois institute followed this trend in the case of most of the reasons the teachers had for referring students to the counselor. Furthermore, the average teacher in the Illinois-institute sample tended to refer more students to the counselor than did the average teacher in the Third Project schools. However, in the case of one particular purpose for referring students to the counselor, the tendency in the Illinois-institute schools went contrary to the tendency in the other schools. This was the case of sending students to the counselor for disciplinary reasons. In the Third Project schools, more students were sent to the counselor for disciplinary reasons in those schools which had sent more faculty members to institutes in guidance. However, the average number of students referred for disciplinary reasons by teachers in the Illinois-institute sample was less than the average number in the Third Project. Since this tendency was contrary to the tendency occurring under other reasons for sending students to the counselor and since the instructors in the Illinois institute had emphasized the necessity for keeping counseling separate from disciplining, these patterns of response (not obtained, remember, from the trainees themselves but from the colleagues of the trainees) are impressive.

Why was it that when we looked only within the Third Project schools we found that attitudes and practices did not differ in many ways according to the number of faculty members sent to training institutes, but that attitudes and practices in the Second Project which had sent one member each to the Illinois institute were variously and remarkably different from those in the Third Project?

After carefully looking over the evidence, our explanation for the effectiveness of the Illinois institute (not only upon the trainees themselves but upon the faculties which the trainees rejoined) must point first to the effectiveness of the institute itself in changing and heightening the knowledge and skill of the trainees. The later responses of the faculties in the schools could not have taken any particular direction in respect to the opinions of the trainee if the trainee had not returned to his school with a clear and communicable cognitive structure concerning his work.*

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*For evidence of the effects of the institute on the trainees, see Chapter IV of Hastings, et al. (1961).

But influential as the Illinois institute must certainly have been upon the trainees themselves, I do not believe the trainees would have been as influential among their faculties as our evidence persuades us they were without the aid of a second and powerfully catalytic factor. The remarkable effects appearing among the Second Project schools rest, I believe, on the fact that the Illinois institute (so far as we have been able to discover) was one of the very few institutes in the entire nation at that time which was followed up by a research project for the purpose of ascertaining its effectiveness. _Our research in itself_, I believe, maintained a high level of attentiveness, sensitivity, and susceptibility among the faculty. Our activities of asking questions and issuing interim reports in all the Second Project schools maintained attention on (a) matters of guidance and counseling and upon (b) the duties and activities of the trainee himself over the year's period. Consequently, effects which might have taken a much longer time in other schools (if they occurred at all) were accelerated -- catalyzed if you will -- by the attention-focusing effects of our research activities.

I am certainly not claiming that the effects were due solely to our research activities. The research staff was careful not to suggest any particular opinions or directions of change to the members of the faculties. Where influence took a particular direction, this was due to the trainee and the training he received, not to the stimulation by the research staff. Let me repeat that. Although the magnitude of the effects on the faculties in the Second Project seems best explained by the catalytic effect of our research activity, the nature or direction of the effect must be attributed to the trainees who returned from the Illinois institute.

The fifth strong suggestion from our research, then, is that a trained person will be more influential if he has considerable help from others in drawing the attention of the faculty to his duties and to the matters he is charged with promoting. I do not suggest, of course, that the administrator should set up a research project to do this; there are many other ways of drawing attention to persons and activities: planning sessions, study groups, in-service training, and all the rest. The entry (or re-entry) of a trained specialist into a faculty should be followed up by such attention-drawing activity.

Before summarizing, let me point out something I am not saying. In suggesting that the general competence in the faculty be increased, I am not saying that it would be nice if everyone in the school were an expert in guidance and testing. I believe this would be impossible even if unlimited money were available. In the nature of human nature, it seems to me that almost everyone must have a preference between classroom teaching and guidance; furthermore, that almost everyone would indeed do better at one or the other and that persons able to do the best job of both tasks would be very rare indeed.

In summary, then, my suggestions for administrators who want to improve the functioning of their schools in guidance and testing are these:

1. Begin the change process by obtaining (somehow) a couple of persons very highly trained in guidance and testing.
2. The next step is to spread some of this kind of knowledge and skill throughout the whole faculty.
3. Keep turnover among the counselors to a minimum. Their best opportunity for influencing the faculty takes some years to develop.
4. When you are ready for the stage of increasing the competence in the faculty at large, take pains to get all communication channels as wide open as possible, both from counselor to teachers and among teachers.
5. From almost the very beginning, set up routines which will draw frequent, recurring attention to matters of guidance and testing generally and to the work of the specialists in your school in particular.

This concludes the ideas suggested so far by the Second and Third Projects which seem useful as policy guides for administrators concerned about improving guidance services within their schools. None of these ideas is new and startling. All of them can be found someplace in the admonitory literature. Yet it is easy to find schools in which these policies, one or more of them, are not being pursued. Communication in some of our sample schools was astonishingly sparse and fragmented. Some schools left one isolated and overburdened counselor to do the whole job of guidance with no attention whatever to the teachers' necessary role in the process. This wastes the very money spent on the counselor's salary.

I have listed in this section five factors which influenced guidance outcomes in our studies. Each was powerful enough so that differences in other variables associated with the factor were discernible in the data. Put together and pursued in a coordinated manner, these five ideas should prove powerful in promoting effective guidance in the school.

Near and Far Goals

In Chapter IV we saw that fewer than half the high-school juniors we studied responded with specific statements when asked about what people actually do in the occupations the students were planning to enter. Ten percent gave thoroughly vague answers, twelve percent described values or ideals which they would be trying to achieve while working at the occupation, 32 percent gave somewhat informative but broad descriptions of the area of work, and 46 percent named some specific duties (Table IV-10). Furthermore, we saw that those students who were facing the longest periods of education before entering upon their chosen occupations were typically those students who were least clear about the day-to-day duties they were heading toward (Table IV-13). These results give one the impression that the largest investments of time and effort were being put into the pursuit of the most uncertain goals; that the students committed to the longest periods of preparation were most exposing themselves to possible disappointment when they would eventually discover the precise nature of the demands of their occupations.

I gave a few reasons in Chapter IV for thinking that very likely it would be unrewarding for teachers and counselors to try to coax the college-going student to learn more about the precise duties of the occupation he has chosen. The reasons were: (1) the time perspective of the typical adolescent -- his ability to treat distant events as pressing -- probably cannot be stretched to the after-college years without making major changes in the entire culture; (2) the college experience itself is a powerful influence on occupational choice, causing many students to come to a commitment for the first time or to change their career directions during their college years; and (3) most teachers tend to value a college education for itself and to want others to value it for itself; this orientation is not superficial but is anchored in strong needs of the teacher, so that it would often be as difficult to get the teacher to pay attention to the after-college years as to get the student to do so.

Beyond these, there seems to me another reason for not pinning down the college-going student too closely to a path toward one particular occupation. By "pinning down" I mean, of course, demanding that he make an early choice, persuading him away from courses not directly relevant to the occupation, giving him reading assignments concerning the nature of the occupation, encouraging him to choose projects (in classes where he has a choice) which are related to the occupation, and all the other things one can do to narrow the focus and rigidify the commitment of the individual. The reason I want to offer for avoiding too contracted a focus is one I touched upon in the first part of Chapter V.

Neither interests nor abilities are crystallized by the time adolescence is reached. They were developing, of course, during all the years before the individual met his high-school counselor. The interests of the adolescent have taken form out of the opportunities his particular sub-culture has offered him; and a number of his abilities have been revealed by the instruction he has received from his schools, his family, his peers, his church, and the other institutions of socialization his society provides. But his interests will continue to alter as he meets wider possibilities and his abilities will continue to develop as he learns better how to learn. His society may require him to change his occupation at the age of 45, and he may become interested in music and learn to play the guitar at 55. If he goes to college, in particular, we would hope that he not only would receive training useful in an occupation, but that the college would teach him how to expand his own horizons -- how to alter consciously his own interests and abilities.

In fact, it seems more and more clear that our society is demanding of us a new view, a new folk-understanding of interests and abilities. We must think of these qualities not so much as characteristics a person _has_ -- not so much as qualities with which he comes to us -- but more as potentialities. Almost everyone has more _potential_ interests and abilities than are ever brought to fruition. In the societies of the past an individual fit the needs of the society very well if only one or a very few of his capacities ever saw use. But our present society, almost without notice, declares a man's present ability obsolete and thereby puts the question to him whether he is obsolete. If a man is not to be one of society's castaways, he must meet society's new demands with new interests and new abilities. He must bring forth from himself skills and abilities only potential until now and find interesting the new tasks there are to do.

In societies of the past the individual was called upon to fill a "station" in life, and each achieved his own kind of maturity within the framework of the duties of his station. But modern society is demanding more of us than this, and in the future will demand much more indeed. Neither the occupational roles nor the social roles can be expected any more to remain stable throughout an individual's lifetime. It is true that our society still enables many people (perhaps a majority of people) to pursue one occupation throughout a lifetime. But the proportion whom the society will not permit to do this is an important fraction and an enlarging fraction and one which even in its present proportions is putting one of the most serious strains upon the fabric of our culture. Automation, geographic mobility, unemployment compensation, retraining, the use of leisure time, earn-while-you-learn -- these are some of the problems composing the total picture.

Occupational roles pose only a part of the difficulty -- perhaps the easiest part, since we have some institutions which can begin to adapt themselves to the problem of helping men from one occupational role to another. The problem of changing social roles is much more difficult. How is a "white" parent in Mississippi to act if he visits his child's school and finds that the teacher is a Negro? Or suppose a white woman in Alabama has a pain in her abdomen, goes to a clinic, and finds herself with a Negro physician. Where is the institution to teach these people the new way to manage these social roles? We have none. Such predicaments as these, fraught with all their meanings of status and morality, are far more difficult to face than the necessity of looking for a new job.

The problem is familiar; and so is my argument, which is that the new generations of humankind must learn to cope with change, and they must do this by being taught (and shown) that learning is not only for youth, but for everyone and forever. They must know that their present modes of working and dealing with others must alter from time to time. But they must know more than this. They must not, as does the present generation, feel that the world trembles and their society shudders when (at last and painfully) they take on the new way of acting. They must be confident that their society expects them to act in the new way, is waiting for them to do so, and will help them to do so. There are signs that our industrial and training institutions are beginning to portray this attitude toward the worker who must change jobs. There are fewer signs that the schools are giving young people practice in making changes gracefully or that they are giving them ways of thinking which will enable the individual to continue to "know who he is" as he moves from one job to another -- to feel that he is still deserving of respect and is not flotsam. There is no sign at all that anyone is teaching young people how to take on new social roles, to do so smoothly, and without a nibbling feeling of hypocrisy -- to do so and still feel they are deserving of respect and are not morally rudderless.

The school counselor has an important part to play in all this. On the one hand it is still important that the counselor help the student to know that he (the student) is heading toward a useful function in the adult world: a job or type of occupation seen with sufficient clarity to identify it even if it is not seen in detail. But on the other hand it is now important that the counselor help the student to know that the functions and roles he sees now are not the final picture of the world he will live in. The young person must know that his present plans are limited and that he cannot even begin to lay more distant plans until the future gradually, in its own time, reveals its shape to him. Consequently, the student must believe that he has within himself the resources to meet situations not now imaginable. He must believe that all the capacities he has have not yet been revealed, to the counselor or to himself. And further, he must believe that, when the time comes for calling forth new interests and abilities, he will know how to do it.

How can the high school student believe all this? How, when he has hardly tried his wings in the rarefied air of adult pursuits, can he have any confidence that he can cope with unknown changes any better than his parents and teachers (who have set him as many odious examples as edifying ones)?

I can at this point plead that I have already got too far afield from the purpose of this book and can, in this way, avoid trying to answer the question I have posed. Sociologists, psychologists, economists, and social thinkers of all stripes are nowadays much concerned about this question of how to train for change, and there is a literature on the matter growing. The counselor can only do his best, at present, to glean ideas where he can. A firm answer from the specialists, or even a clear direction to look for an answer, is not yet to be had.

However, it is clear that there is one kind of social process which somehow will have to be contained in the answer which eventually is given to the question about how young people are to learn to meet change. The social process which must be a part of the answer is, of course, that of education. It is clear that education in some form or another must become a recurring part of life. It must become a focus to which everyone returns from time to time, and a point of view which no one ever entirely loses. The growing necessity for occupational retraining is beginning to force this realization upon us in respect to occupational roles. And industrialists are beginning to see that the labor market must be cultivated in the same way that a farmer rotates his crops to revitalize the soil. So must modern man rotate his activities between productive working and revitalizing learning. Alterations in social patterns can no longer be left to take place between generations, and neither now can education. Teachers and counselors must find ways of showing the student that his school can give him only first learnings. These first learnings, in turn, must give him the ways and methods to which he can turn when each future occasion demands further learning from him. Telling the student these things, as every good teacher knows, is not enough. The school must work out new forms, new tasks, new schedules, which can make this new view (and other new views) a way of living.

It amazes me that there are those who worry about finding things for people to do with their "leisure" as the work week grows shorter. All the time that a shorter work week can provide can be used for learning. But the statement is too weak; it is clear that the demands of our changing society cannot much longer be ignored; vastly more time must be found for re-training in occupations, for the education of the intellect, for acquiring the political lore and skill of the effective citizen, for learning more effective ways of thinking about human beings and dealing with them in family, neighborhood, and community, and for all the other clamorous needs for higher awareness and skill. Fortunately, at the same time that the complexity of our society makes these demands upon us it also makes us rich enough so that we can afford to take the time, if we will reach out to do so, to learn how to meet our new problems. But although the economics of our society are capacious enough to give us the time to learn how to solve our problems, the picture is still not rosy. We have still not learned how to mobilize people to learn new ways of meeting new problems; we have not yet learned how to demand learning from our citizenry after they have passed adolescence.

All this has been by way of warning against a focus on too narrow a future in vocational counseling, a warning against a closed commitment to what must be only a part of an open future. It seemed to me insufficient merely to say that the interests of students change and the future is somewhat unpredictable. It seems to me important for us to give thought to the potentialities of interests and abilities and to the particular aspects of our society which are most predictably unpredictable.

The Idealism of the Prospective Teacher

In looking at the responses students gave to the question about what people in the chosen occupation "actually do," one classification we used was that of values or ideals. We put answers into this category if they did not describe particular actions but instead described the goals of the actions. For example, suppose a boy wanted to become a science teacher. Asked what science teachers "actually do," he might say, "Explains to boys and girls and shows them with laboratory experiments how science is in things all around them." Such an answer would have been categorized as specific. But suppose he had said, "Helps boys and girls to know how important science is." This would have been categorized as a value answer because it does not mention any activity peculiar to teaching; it expresses instead a goal or ideal which a teacher can hold.

We found (see Tables IV-23 and 24) that students who chose teaching as a future profession more frequently gave value answers than did students choosing other occupations. We noted that these results agreed with those of Biddle et al. (1962), who found that college students preparing to be teachers, compared to non-education students, approved of less gross self-indulgence on the part of teachers, approved of more pupil freedom, and approved of less support in the school for arbitrary rules.

In a way, these results are encouraging since we like to think of professionals as idealistic. For the demands of realism, however, one must ask whether those who remain in the profession show the same idealism as those preparing for the profession. Biddle et al. also elicited the role perceptions of practicing teachers. They found that the practicing teachers, as compared to the education students, approved of less community participation for teachers, of more "cooperation" with the principal, of even less gross self-indulgence (such as drinking alcoholic beverages), and of less pupil freedom. These results argue that the idealistic teacher in training is due for some disappointments. Biddle et al. (1962) comment on their findings as follows.

> "These findings suggest that roles held for the teaching profession by teachers, education students, and non-education students are different in significant and in subtle ways. How can we interpret these findings? What significance do they have for recruitment of teachers?
>
> "The finding that education students were idealistic in allowing pupil freedom in comparison with both teachers and non-education students was unexpected. Such a distortion might be explained in several ways. It is possible that idealistic professors of education are having an impact on education students and that their idealism represents inspired social change that will take place in the school systems of tomorrow. It is also possible that education students are choosing a teaching career because of the idealistic picture they hold of teacher-pupil relations. Finally, it is possible that the education student assumes a patina of idealism as a protective device during the time when he is a student and unable to experience the rewards of professional participation. Such an interpretation would imply that similar idealistic autisms might be found in recruits to other professions, such as nursing, social work, and the ministry.
>
> "What implications do the differences between the two student groups have for recruitment? It should be noted that non-education students expected teachers to be non-cooperative,

> non-participating, self-indulgent, noisy, and to restrict pupil behavior. (No wonder these students did not want to become teachers!) These data suggest that beliefs rather than values are keeping non-education students from considering a teaching career and that the norms held by non-education students are reflections of their stereotyped expectations. Under this interpretation, education students are recruited because they hold different expectations or because their values override their good sense. Should these expectations by non-education students prove to be erroneous, it is implied that a larger number of students of education than are presently available may be recruited by educational or informational campaigns aimed at changing expectations.
>
> "But whatever the relevance of these data for initial recruitment, their significance for the young teacher is obvious. Differences between role elements held by teachers and education students indicate difficulties which these students will experience during their first year of teaching. They must change their autistic role elements, or they must somehow find a school system in which their expectations are accurate. (Accurate expectations are a necessity for the young teacher. Idealistic norms may be tolerated or even encouraged in a rapidly changing social system.) Such role distortions may be responsible for a good deal of the high drop-out rate during the first year of teaching. Such findings also point to the value of fifth-year programs or other arrangements where young teachers receive on-the-job training and advice" (pp. 203-204).

One could ask questions similar to Biddle's not only about the recruitment and turnover of teachers, but also of guidance counselors. How many counselors are recruited from the teaching ranks because they were disappointed in their anticipations of the teacher's role?

Our data provide some partial information about where counselors come from. The data do not tell us whether any guidance counselors exist anyplace who never taught as classroom teachers, but at least they tell us how many counselors in our sample came from classrooms in the same school where they then were when we sent them our questionnaires. This information came from two questions which we asked of the counselor:

(1) "How long have you been a counselor (years)?" and (2) "How long have you been at this school (either as counselor or as teacher)?" Those counselors who reported more years at the school than the number of years they had been counselors had obviously been recruited from the teaching staff at the school at which they were then working.*

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*It is conceivable that a teacher could have been a counselor at some other school, could then have come to his present school as a classroom teacher, and could then later have turned again to counseling at his present school. But the number of such cases is surely negligible.

The distribution of answers to these two questions is illustrated in Table VI-16, where years are grouped for brevity. When the exact number of years were taken which counselors named in answer to the two questions, it turned out that 126 counselors out of 224 had been in their present schools longer than they had been counselors. This is no doubt a good estimate of the number of counselors in our sample who had been recruited, not only from teaching, but from teaching in the very same school.

Supposedly almost every counselor has been at one time or another a classroom teacher, and we see in our Illinois sample that half or more were teachers in the same school in which they were later counselors. Why do these people leave the classroom, either in part or wholly? No doubt there are multiple reasons. One reason to which it might be profitable to pay attention, however, is the possibility that some of them were disillusioned. Perhaps they found classroom teaching not to be what they had hoped.

What does a teacher do if he finds he does not like teaching? I remarked before that our society does not yet make it easy to change

Table VI-16. Number of Counselors Who Had Been at Present School Indicated Number of Years and Who Had Been Counselors Indicated Number of Years.

Years at present school	Years as counselor 1-3	4-11	12-32	Total
12-41	9	39	41	89
4-11	19	48	9	76
1- 3	38	17	4	59
Total	66	104	54	224

from one occupation to another. Even so, the turnover in teaching is high during the first few years. Many teachers, even after long educational preparation, leave the profession for other work. Yet many teachers enter the profession with idealistic goals; they want to be of service to young people. Another alternative for those who become disappointed with classroom teaching is to stay in the profession, more largely defined, but in a capacity outside the classroom. Guidance counseling seems admirable suited to those who maintain their idealistic motivations but find themselves not suited to the classroom. If there is a fairly large number of people who enter guidance for these reasons, they might do their work better if they could be got directly into guidance without having to go through a souring period beforehand.

Over-Aspiration

A final point of interest in our findings was the rarity with which students named low-status occupations when asked, "What occupations have you thought of as your possible life work?" and were asked both for first and second choices. It may be that the phrasing of the question encouraged fantasy, but even so the proportions of semi-skilled and unskilled work -- even of skilled work, for that matter -- were very low. Appendix IV-C shows the following percentages of first occupational choices:

	Males	Females
Professions	48.0	43.8
Sub-professional	9.6	5.5
Sales or secretary	4.1	36.8
Skilled	32.9	8.5
Vague or unskilled	5.4	2.2
Housewife	0	3.2
	100.0	100.0

In contrast with the fact that a larger proportion of students named the higher-status occupations than can with any likelihood find their way into them is the fact that many students were enrolled in curricula which would not fit them for the occupations to which they presumably aspired, and the fact that most of the inappropriate cases were those of students who named occupations requiring college training but were in non-college-preparatory curricula (Tables V-5 and 6). That is, we might look upon enrolling in a curriculum as a kind of occupational choice and argue that, while many students named some profession when asked "what they had thought of," they showed their true realistic choices by enrolling in a commercial or vocational curriculum.

No doubt some part of what we called inappropriateness of curriculum to occupational choice was due to the "social desirability" of writing down a high-status occupation, as I mentioned in Chapter V. Yet every employer knows that many young people spend an unrealistic amount of time applying for jobs for which they are under-qualified, and every counselor knows that adolescent aspirations do tend to be out of proportion to the current shape of the employment opportunities. He knows, too, that many high-school students believe that any high school curriculum will qualify them for college. Finally, we can believe that a good proportion of what we have called inappropriateness was indeed serious inappropriateness since Tables V-5 and 6 showed important percentages of students who, although they were enrolled in the curriculum having the correct name to go with their occupational choices, nevertheless were judged to have been getting such low grades or to be taking such a hodge-podge of courses that their training was still not fitting them for their named occupations. All in all, our **findings seem to** be fairly reliable evidence that large proportions of inappropriate occupational choice exist among high school juniors.* This will come as no surprise to high-school counselors; at least we can testify to the fact that the problem is still there to confront them.

Summary

Reviewing the evidence presented in earlier chapters for the present effectiveness of guidance in unselected Illinois high schools, we noted that we had found evidence that students in the middle and low ranges of academic aptitude were benefiting from the efforts of counselors, in certain respects, in schools where counselors were aided by supplementary guidance activity on the part of the teachers. The students in these schools showed more knowledge about their chosen occupations and made more appropriate occupational choices than did students in other schools. However, the evidence also demanded some qualifications of such a simple statement.

The evidence supporting our claim for the effectiveness of guidance was not dense; only a few combinations of predictor and criterion variables showed significant relations. Aside from indicating the difficulty of searching out empirical support for the effectiveness of guidance, our results also demonstrated that effectiveness in one respect may not promise effectiveness in another.

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*Tables V-5, 6, 9, and 10 show the percentages of inappropriateness of each of the two kinds we studied; 188 students out of 1043, or 18 percent, were judged to have made inappropriate choices on both counts at the same time.

Our results made it clear that the sheer availability of relatively more counselors (at least in the quantities existing today) is not sufficient to produce detectable differences in the criterion variables we used in this study, such as the student's knowledge about the educational requirements for his occupation or the appropriateness of the student's occupational choice to his SWTP abilities. Positive results did not turn up among our data until we also took account of supportive guidance activity on the part of teachers. The inference is clear that guidance activity by faculties can significantly aid in reaching at least some of the goals of guidance. It is also clear that the variables used in this study are far from sufficient to tell the whole story of counseling effectiveness. Many other variables should be studied -- training, counseling technique, student differences, etc. -- but they should be studied in their combinations and interactions in the "live" situation.

We examined some evidence for the hypothesis that counselors under present conditions are devoting their major effort to correcting gross errors in career planning among students of middle and low academic aptitude. We concluded that counselors could not be expected to do as well for students throughout the school unless the present levels of manpower devoted to counseling are radically increased. Some particular figures were discussed. Some cautions were also offered concerning the clamor heard nowadays to coax every "high ability" student into college.

A section of this chapter was devoted to some suggestions for school administrators who wish to improve the effectiveness of guidance within their own schools. Although these suggestions were not novel, they were taken from research results which demonstrated their efficacy. These suggestions were:

1. Begin the change process by obtaining (somehow) a couple of persons very highly trained in guidance and testing.

2. The next step is to spread some of this kind of knowledge and skill throughout the whole faculty.

3. Keep turnover among the counselors to a minimum. Their best opportunity for influencing the faculty takes some years to develop.

4. When you are ready for the stage of increasing the competence in the faculty at large, take pains to get all communication channels as wide open as possible, both from counselor to teachers and among teachers.

5. From almost the very beginning, set up routines which will draw frequent, recurring attention to matters of guidance and testing generally and to the work of the specialists in your school in particular.

The question of the distance in the future at which occupational goals can be meaningful for adolescents was raised again in this chapter, this time in connection with the dangers of crystallizing one's perceptions of his abilities and interests around a single occupational goal. The need for ready adaptability in our changing society was discussed and the need for new conceptions of abilities and interests.

Some brief notes also were offered concerning problems raised by disappointed idealism on the part of the teacher and over-aspiration on the part of the high school student.

With this chapter we leave the primary criteria for counseling effectiveness. We turn in the next chapter, not to evidence that guidance goals were being reached, but to evidence of awareness on the part of students that guidance activities were indeed being carried on in our sample of schools.

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CHAPTER VII

EFFECTS ON STUDENTS: AWARENESS OF THE TESTING PROGRAM

We have seen in the last three chapters that it was not easy to find evidence of the outcomes of guidance counseling among the responses of students. But perhaps we were expecting too much. I myself have argued that the generally prevalent counselor-student ratios are too low to produce many effects measurable in the mass. Perhaps we should look for less ultimate effects. Perhaps we should forgo evidence of achieving the usual goals of guidance and be satisfied, at this point in the history of the guidance profession, if we find students simply aware that something is going on. It should certainly not be over-optimistic to hope that the manifestations of guidance activity would be noticeable and reportable by students and that more students would be able to report such activity where more manpower for guidance was at work. This chapter and the next will take this tack.

Awareness of guidance activity on the part of students would not in itself be any evidence that the goals of guidance were being achieved; but it would at least indicate that guidance efforts were having some minimal impact upon the student consciousness. This in turn would indicate that the guidance program was, so to speak, in contact with the students and that at least some groundwork had been laid upon which further and possibly more effective contact could be built. If our findings concerning immediate effectiveness have been sparse, perhaps this chapter can give us hope that students are at least beginning to pay attention.

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This is not to deny that good guidance counseling can be (and perhaps should be) unobtrusive. For example, students need not know that the people in their school who help them are called "counselors" as long as they know that there is someplace in their school where they can go to get help with their plans and problems. This chapter will take no issue with this point of view.

This chapter will examine the extent of student awareness of certain activities connected with guidance, all of them concerned in one way or another with the use of test results. I explained in Chapter II that the original design of the study was focused upon the uses of test results in high schools, and it is for this reason that the criterion variables available for use in this chapter have that slant. As will be seen, however, we did not seek any subtle or technical knowledge on the part of students about the handling of test results in the school; the matters about which we sought the student's knowledge were only the most palpable sort.

At the simplest level, we can note that almost all the students in schools containing counselors were aware that the counselors were there. Table III-8 showed that in schools which had counselors from 89 percent to 97 percent of the students were aware that this was so. But let us turn now to evidences of awareness of the testing program of the school. (It should be recalled that all schools in which we sampled students administered one battery of standardized tests and usually more than one.)

Administering Standardized Tests

One item in the questionnaire for students read as follows:

> "Does your school give any standardized tests to students? (A standardized test is one that is made up by persons outside the school, that comes in a printed booklet, and is usually given to all students.)
>
> Yes _____ No _____ Uncertain _____ "

In general, large proportions of students correctly answered "Yes" to this question. Of 1092 students, 79.4 percent answered "Yes," 17.9 percent answered "Uncertain," and 2.7 percent answered "No." As might be supposed, the proportion of "Yes" answers increased with the academic aptitude of the student (2 df, $p \leq .001$).

Taking only the simple two-variable relations between each predictor variable in turn and awareness on the part of the student that standardized tests were administered in his school, many statistically significant relations turned up (See Appendix VII-A). However, as we often saw to be the case in previous chapters, many of these relations lost their significance when the academic aptitude of the student or some other control variable was taken into account. For example, Table VII-1 shows that there was no significant relation between counselor-student ratio and the criterion variable when the relation was controlled for academic aptitude. In Table VII-2, we see that there was no relation between visiting the counselor and the criterion variable when we took into account the frequency with which the student discussed test results with teachers. And in turn, talking with teachers about test results did not in itself show a significant

Table VII-1. Awareness of Students that School Administered Standardized Tests: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Gave Indicated Answers to the Question, "Does Your School Give Any Standardized Tests to Students?" Shown Separately for Three Levels of Academic Aptitude.

	Awareness					
Counselor-student ratio	No or uncertain	Yes	Total	N	Chi-square	
		High DAT				
.00323 - .00794	10	90	100	154		
.00168 - .00322	11	89	100	96		
Zero - .00167	15	85	100	96		
	12	88	100	346	1.49	NS
		Middle DAT				
.00323 - .00794	15	85	100	131		
.00168 - .00322	17	83	100	109		
Zero - .00167	21	79	100	117		
	17	83	100	357	2.42	NS
		Low DAT				
.00323 - .00794	23	77	100	90		
.00168 - .00322	34	66	100	119		
Zero - .00167	36	64	100	149		
	32	68	100	358	4.37	NS
		6 df, total chi-square			8.28	NS

Table VII-2. Awareness of Students that School Administered Standardized Tests: Percentages of Students Who Had and Had Not Visited a Counselor Who Gave Indicated Answers to the Question, "Does Your School Give Any Standardized Tests to Students?" Shown Separately for Students Who Reported Indicated Frequencies of Talking to Teachers or Counselors About Standardized Test Results.

	Awareness					
Visited counselor	No or uncertain	Yes	Total	N	Chi-square	
			Talked with teachers or counselors frequently			
Yes	12	88	100	171		
No	21	79	100	57		
	14	86	100	228	2.00	NS
			Talked sometimes			
Yes	15	85	100	272		
No	21	79	100	158		
	17	83	100	430	2.45	NS
			Talked rarely			
Yes	21	79	100	99		
No	28	72	100	92		
	25	75	100	191	0.92	NS
			Talked never			
Yes	27	73	100	86		
No	29	71	100	118		
	28	72	100	204	0.03	NS
			4 df, total chi-square		5.40	NS

relation with the criterion variable when controlled for academic aptitude, as can be seen in Table VII-3. However, there was an interaction between talking with teachers about test results and visiting a counselor; this is shown in Table VII-4. Among students who had visited a counselor, those who had talked with teachers sometimes or frequently were more often aware that the school administered standardized tests than those who had talked with teachers only rarely or never. On the other hand, talking with teachers seemed to have no effect upon students who had not visited a counselor.

Table VII-4, however, does not control the analysis for academic aptitude. Table VII-5 uses visiting the counselor and talking with teachers about test results both together as predictor variables and separates the students according to academic aptitude. It can be seen in Table VII-5 that the overall relation is statistically significant between the two predictor variables and awareness that standardized tests were administered. Again, as we found in a number of other analyses, the stronger effects showed up among the students of lower academic aptitude. In Table VII-5, the effect among students of low academic aptitude is due chiefly to visiting the counselor.

It is true that the relation between visiting the counselor and the criterion variable was statistically significant when controlled only on academic aptitude even when talking to teachers about test results was not brought into the analysis (see Appendix VII-A). Nevertheless, visiting the counselor cannot be considered sufficient by itself to predict differences in awareness on the part of students

Table VII-3. Awareness of Students that School Administered Standardized Tests: Percentages of Students Reporting Indicated Frequencies of Talking with Teachers and Counselors About Standardized Test Results Who Gave Indicated Answers to the Question, "Does Your School Give Any Standardized Tests to Students?" Shown Separately for Three Levels of Academic Aptitude.

Talked with teachers or counselors about test results	Awareness					
	No or uncertain	Yes	Total	N	Chi-square	
	High DAT					
Frequently	9	91	100	103		
Sometimes	12	88	100	154		
Rarely or never	16	84	100	87		
	12	88	100	344	1.79	NS
	Middle DAT					
Frequently	14	86	100	79		
Sometimes	14	86	100	130		
Rarely or never	22	78	100	139		
	17	83	100	348	4.12	NS
	Low DAT					
Frequently	31	69	100	42		
Sometimes	29	71	100	133		
Rarely or never	34	66	100	163		
	32	68	100	338	0.57	NS
	6 df, total chi-square				6.48	NS

Table VII-4. Awareness of Students that School Administered Standardized Tests: Percentages of Students Reporting Indicated Frequencies of Talking with Teachers or Counselors About Standardized Test Results Who Gave Indicated Answers to the Question, "Does Your School Give Any Standardized Tests to Students?" Shown Separately According to Whether the Student Had Visited a Counselor.

Talked with teachers or counselors about test results	Awareness				
	No or uncertain	Yes	Total	N	Chi-square
Had visited a counselor					
Sometimes or frequently	14	86	100	443	
Rarely or never	24	76	100	185	
	17	83	100	628	8.23 P < .005
Had not visited a counselor					
Sometimes or frequently	21	79	100	215	
Rarely or never	29	71	100	210	
	25	75	100	425	2.55 NS
			2 df, total chi-square		10.78 P < .005

Table VII-5. Awareness of Students that School Administered Standardized Tests: Percentages of Students (a) Who Had and Had Not Visited a Counselor, Crossed with (b) Frequency of Talking with Teachers or Counselors About Standardized Test Results, Who Gave Indicated Answers to the Question, "Does Your School Give Any Standardized Tests to Students?" Shown Separately for Three Levels of Academic Aptitude.

		Awareness				
Visited counselor	Talked with teachers or coun. about test results	No or uncertain	Yes	Total	N	Chi-square
		High DAT				
Yes	Some. or freq.	10	90	100	175	
Yes	Rare. or never	17	83	100	40	
No	Some. or freq.	11	89	100	82	
No	Rare. or never	15	85	100	47	
		12	88	100	344	1.96 NS
		Middle DAT				
Yes	Some. or freq.	12	88	100	148	
Yes	Rare. or never	25	75	100	67	
No	Some. or freq.	18	82	100	61	
No	Rare. or never	19	81	100	72	
		17	83	100	348	6.11 NS
		Low DAT				
Yes	Some. or freq.	23	77	100	108	
Yes	Rare. or never	25	75	100	73	
No	Some. or freq.	38	62	100	71	
No	Rare. or never	41	59	100	90	
		31	69	100	324	10.31 P < .02
			9 df, total chi-square			18.38 P < .05

because, as we saw in Table VII-2, the relation vanished when talking to teachers about test results was taken into account. We must conclude (with the support of Table VII-5) that visiting the counselor worked together with talking with teachers to sort out those students who were more aware than others that standardized tests were given in the school.

In sum, we have some evidence that visiting the counselor made students more aware that standardized tests were administered (Table VII-5) and that when they did visit the counselor, having talked to teachers about test results heightened their awareness (Table VII-4) although this latter effect was not pronounced when the relation was controlled for academic aptitude (Table VII-5). All in all, the criterion variable concerning awareness of the administration of standardized tests provides us with one kind of evidence that students were aware of this kind of guidance activity and that visiting the counselor, taken together with talking with teachers, heightened the awareness.

Differences Among Curricula

Given the emphasis on academic skills contained in most high school testing programs (including the SWTP), one might guess that awareness of the administration of standardized tests would be higher among college-preparatory students than among students in other curricula.* Tables VII-6 and 7 show very clearly that this was true at all three levels of academic aptitude.

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*Curriculum designations in this chapter are taken from the student's own report of his curriculum.

Table VII-6. Awareness of Students that School Administered Standardized Tests -- Males Only: Percentages of Boys in Indicated Curricula Who Gave Indicated Answers to the Question, "Does Your School Give Any Standardized Tests to Students?" Shown Separately for Three Levels of Academic Aptitude.

	Awareness					
Curriculum	No or uncertain	Yes	Total	N	Chi-square	
	High DAT					
College preparatory	6	94	100	128		
Other	28	72	100	29		
	10	90	100	157	9.61	P < .005
	Middle DAT					
College preparatory	14	86	100	95		
Other	26	74	100	72		
	19	81	100	167	3.49	P < .066
	Low DAT					
College preparatory	11	89	100	37		
Other	25	75	100	109		
	32	68	100	146	9.14	P < .005
		3 df, total chi-square			22.24	P < .001

Table VII-7. Awareness of Students that School Administered Standardized Tests -- Females Only: Percentages of Girls in Indicated Curricula Who Gave Indicated Answers to the Question, 'Does Your School Give Any Standardized Tests to Students?" Shown Separately for Three Levels of Academic Aptitude.

	Awareness					
Curriculum	No or uncertain	Yes	Total	N	Chi-square	
		High DAT				
College preparatory	11	89	100	138		
Other	24	76	100	49		
	13	87	100	187	5.86	P < .02
		Middle DAT				
College preparatory	10	90	100	71		
Other	20	80	100	114		
	16	84	100	185	2.71	NS
		Low DAT				
College preparatory	28	72	100	36		
Other	34	66	100	169		
	33	67	100	205	0.24	NS
		3 df, total chi-square			8.81	P < .05

The relation between curriculum and awareness was stronger for males than for females, and this seems a little strange when we recall our findings in Chapter V concerning the proportion of high DAT students in college-preparatory curricula. There we found some evidence that counselors were succeeding in getting relatively more females with high academic aptitude into the college-preparatory curriculum but were having an insignificant effect among males. We now find that the relative differences in awareness of the testing program between college-preparatory students and other students were apparently stronger among males than among females. If awareness that standardized tests are given is an indication of the degree to which counselors and others drew the students' attention to test results, then it would appear from the evidence of this chapter that more such effort was devoted to males than to females. Yet one presumed purpose of the counselor in such consultation -- guiding students with high academic aptitude into college-preparatory curricula -- seems to have had more effect among females than among males (Table V-4). Of course, there are many assumptions in this chain of reasoning, such as the supposition that counselors would have talked to students about test results in those schools where relatively more students with high DAT scores were appearing in the college-preparatory curriculum. Such assumptions as this may not be correct. In any case, Tables VII-6 and 7 give clear evidence that college-preparatory students had become more aware that standardized tests were given than did students in other curricula. In fact, when we compared curriculum (college-preparatory, commercial, vocational) with percentages visiting the counselor, the relation was found to be significant for males (2 df, chi-square = 12.75, $P < .01$) with a greater percentage of college-preparatory males having visited a counselor than did students in other curricula; but the relation was not significant for females (2 df, chi-square = 5.03), although the overall relation remained significant beyond the 0.1 level of confidence.

Given the fact that college-preparatory students were more often aware of a certain aspect of the testing program than were students in other curricula, it might occur to us that since counselors talked with more of the college-preparatory students than of the students in other curricula, more of the college-preparatory students were exposed to the knowledge. Nevertheless, talking to the counselor, by itself, did not seem to provide the college-preparatory student with greater awareness that standardized tests were administered in his school; this is evident from the non-significant result in the upper half of Table VII-8, where we see that the proportion of students saying "yes" was about the same regardless of whether the student had visited a counselor. On the other hand, students in other curricula were much more aware of the testing program if they had visited a counselor than if they had not. These results may mean that students in the college-preparatory curricula had their attention drawn to testing by teachers as well as by counselors; perhaps because their teachers had drawn their attention to such matters over a period of some years. It will be noted in Table VII-8 that the over-all percentages of students who were aware of the testing program were very different in the two types of curricula: 89 percent of college-preparatory students gave the correct answer but only 70 percent of

Table VII-8. Awareness of Students that School Administered Standardized Tests: Percentages of Students Who Had and Had Not Visited a Counselor Who Gave Indicated Answers to the Question, "Does Your School Give Any Standardized Tests to Students?" Shown Separately by Curriculum of Student.

	Awareness					
Visited counselor	No or uncertain	Yes	Total	N	Chi-square	
	College-preparatory curricula					
Yes	11	89	100	332		
No	10	90	100	184		
	11	89	100	516	*	NS
	Other curricula					
Yes	25	75	100	288		
No	36	64	100	263		
	30	70	100	551	7.53	P < .01
	2 df, total chi-square				7.53	P < .05

* Counted as zero because direction of disproportionality is contrary to other sub-table.

students in other curricula. We saw similar differences in Tables VII-6 and 7. Is it possible that the college-preparatory students were saturated, so to speak? That is, were those college-preparatory students who were still unaware of the administration of standardized tests -- only about ten percent -- so inattentive to counselors that visiting them could have no further effect?

Table VII-9 shows a pattern similar to that of Table VII-8 but this time in respect to the effects of talking with teachers (or counselors) about test results. Talking with faculty about test results had no significant effect on the awareness of students in the college-preparatory curricula but did have a significant effect among students in other curricula. In this table, which used a predictor variable reflecting a different source of information than did Table VII-8, we again see the saturation effect suggested.

The findings of Tables VII-8 and 9 ought to be controlled for level of academic aptitude. Unfortunately, the findings for students in the college-preparatory curricula could not be examined with the students separated into three levels of DAT because the frequencies in some of the cells became too small to yield a reliable significance test. However, the distribution of students in other curricula enabled them to be separated by academic aptitude; the results of doing this are shown in Tables VII-10 and 11. Table VII-10 shows (for students not in college-preparatory curricula) that the effects of visiting the counselor were still significant when controlled for academic aptitude with the strongest effect (this should be no surprise by now) occurring among students of

Table VII-9. Awareness of Students that School Administered Standardized Tests: Percentages of Students Reporting Indicated Frequencies of Talking to Teachers or Counselors About Standardized Tests Who Gave Indicated Answers to the Question, "Does Your School Give Any Standardized Tests to Students?" Shown Separately by Curriculum of Student.

Talked with teachers or counselors about test results	Awareness: No or uncertain	Awareness: Yes	Total	N	Chi-square	
College-preparatory curricula						
Sometimes or frequently	10	90	100	357		
Rarely or never	13	87	100	147		
	11	89	100	504	0.94	NS
Other curricula						
Sometimes or frequently	26	74	100	287		
Rarely or never	34	66	100	241		
	30	70	100	528	3.92	P < .05
2 df, total chi-square					4.86	P < .10

Table VII-10. Awareness of Students that School Administered Standardized Tests -- Students in Non-College-Preparatory Curricula Only: Percentages of Students Who Had and Had Not Visited a Counselor Who Gave Indicated Answers to the Question, "Does Your School Give Any Standardized Tests to Students?" Shown Separately for Three Levels of Academic Aptitude.

	Awareness					
Visited counselor	No or uncertain	Yes	Total	N	Chi-square	
			High DAT			
Yes	28	72	100	46		
No	22	78	100	32		
	26	74	100	78	0.19	NS
			Middle DAT			
Yes	21	79	100	107		
No	25	75	100	79		
	23	77	100	186	0.35	NS
			Low DAT			
Yes	27	73	100	130		
No	44	56	100	148		
	36	64	100	278	7.97	P < .01
		3 df, total chi-square			8.51	P < .05

low DAT. The variable of talking with faculty about test results does not fare so well; Table VII-11 shows (still for students not enrolled in college preparatory curricula) that talking with faculty about test results was no longer significantly related to awareness that standardized tests were given when controlled for academic aptitude. We should not assume that these patterns would be the same among students in college preparatory curricula; we have seen, and shall see again, that patterns of relations were sometimes different among students in different curricula.

In summary, awareness by the student that standardized tests were administered in his school was not predictable from counselor-student ratio (Table VII-1), from visiting the counselor taken by itself (Table VII-2), nor from talking with teachers taken by itself (Table VII-3). Awareness was predictable, however, from visiting the counselor and talking with teachers taken together (Tables VII-4 and 5); and the relation was particularly pronounced among students of low academic aptitude. It also turned out that college-preparatory students were generally more aware of test administration than students in other curricula. For students not in college-preparatory curricula, awareness tended to be more frequent among students who had visited a counselor without regard to talking with teachers (Tables VII-8 and 10); and this tendency was strongest among students of low academic aptitude (Table VII-10).

A possible conclusion from these findings is that college-preparatory students and students of high academic aptitude (and these categories overlap considerably) tended to become widely aware of the

Table VII-11. Awareness of Students that School Administered Standardized Tests -- Students in Non-College-Preparatory Curricula Only: Percentages of Students Reporting Indicated Frequencies of Talking with Teachers or Counselors About Standardized Test Results Who Gave Indicated Answers to the Question, "Does Your School Give Any Standardized Tests to Students?" Shown Separately for Three Levels of Academic Aptitude.

Talked with teachers or counselors about test results	Awareness					
	No or uncertain	Yes	Total	N	Chi-square	
	High DAT					
Sometimes or frequently	26	74	100	53		
Rarely or never	25	75	100	24		
	26	74	100	77	*	NS
	Middle DAT					
Sometimes or frequently	16	84	100	98		
Rarely or never	30	70	100	80		
	22	78	100	178	3.97	P < .05
	Low DAT					
Sometimes or frequently	33	67	100	132		
Rarely or never	37	63	100	132		
	35	65	100	264	0.27	NS
		3 df, total chi-square			4.24	NS

* Counted as zero because direction of disproportionality is contrary to other sub-tables.

testing program quite apart from visits to the counselor or talks about testing with faculty, but the awareness of students in other curricula and of students of lower academic aptitude was affected by both these factors and was more strongly affected when the student both visited a counselor and talked frequently with teachers about test results. This distribution of effect is similar to results we saw in Chapters IV and V.

Participating in the SWTP

An item of the student's questionnaire asked,

"Does your school give the tests of the Illinois Statewide High School Testing Program?

Yes _____ No _____ Uncertain _____ "

The analysis of this criterion variable gave results somewhat different from the item concerning the giving of "any standardized tests." The chief difference was that talking with faculty about test results seemed to be more important in respect to specific awareness of the Illinois battery by name than it was in respect to being aware of standardized tests in general. Use of this variable as a control removed the otherwise significant relation between awareness of the SWTP and counselor-student ratio (Table VII-12) and also the relation between the criterion variable and visiting the counselor (Table VII-13). Furthermore, unlike the result of Table VII-3, the relation between talking with faculty and the present criterion variable was not removed when controlled for academic aptitude (see Table VII-14) nor was it removed by controlling for visiting the counselor (Table VII-15) nor for counselor-student ratio (Table VII-16). Finally, the differences in

Table VII-12. Awareness of Students that School Participated in SWTP: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Gave Indicated Answers to the Question, "Does Your School Give the Tests of the Illinois Statewide High School Testing Program?" Shown Separately for Students Who Reported Indicated Frequencies of Talking with Teachers or Counselors About Standardized Test Results.

	Awareness					
Counselor-student ratio	No or uncertain	Yes	Total	N	Chi-square	
	Talked with teachers or counselors frequently					
.00323 - .00794	16	84	100	92		
.00168 - .00322	25	75	100	69		
Zero - .00167	28	72	100	61		
	22	78	100	222	2.77	NS
	Talked sometimes					
.00323 - .00794	27	73	100	149		
.00168 - .00322	26	74	100	133		
Zero - .00167	37	63	100	139		
	30	70	100	421	5.26	P < .077
	Talked rarely or never					
.00323 - .00794	36	64	100	123		
.00168 - .00322	38	62	100	116		
Zero - .00167	47	53	100	149		
	40	60	100	388	2.80	NS
			6 df, total chi-square		10.83	NS

Table VII-13. Awareness of Students that School Participated in SWTP: Percentages of Students Who Had and Had Not Visited a Counselor Who Gave Indicated Answers to the Question, "Does Your School Give the Tests of the Illinois Statewide High School Testing Program?" Shown Separately for Students Who Reported Indicated Frequencies of Talking to Teachers or Counselors About Standardized Test Results.

	Awareness					
Visited counselor	No or uncertain	Yes	Total	N	Chi-square	
	Talked with teachers or counselors frequently					
Yes	28	72	100	86		
No	47	53	100	118		
	39	61	100	204	7.17	P < .01
	Talked sometimes					
Yes	38	62	100	100		
No	40	60	100	92		
	39	61	100	192	0.03	NS
	Talked rarely					
Yes	30	70	100	272		
No	29	71	100	158		
	30	70	100	430	*	NS
	Talked never					
Yes	23	77	100	170		
No	25	75	100	57		
	23	77	100	227	0.00	NS
		4 df, total chi-square			7.21	NS

* Counted as zero because direction of disproportionality is contrary to other sub-tables.

Table VII-14. Awareness of Students that School Participated in SWTP: Percentages of Students Reporting Indicated Frequencies of Talking with Teachers or Counselors About Standardized Test Results Who Gave Indicated Answers to the Question, "Does Your School Give the Tests of the Illinois Statewide High School Testing Program?" Shown Separately for Three Levels of Academic Aptitude.

Talked with teachers or counselors about test results	Awareness					
	No or uncertain	Yes	Total	N	Chi-square	
	High DAT					
Frequently	21	79	100	101		
Sometimes	30	70	100	154		
Rarely or never	43	57	100	87		
	31	69	100	342	10.03	P < .01
	Middle DAT					
Frequently	18	82	100	79		
Sometimes	25	75	100	130		
Rarely or never	35	65	100	139		
	27	73	100	348	7.80	P < .02
	Low DAT					
Frequently	33	67	100	42		
Sometimes	33	67	100	137		
Rarely or never	43	57	100	162		
	38	62	100	341	4.05	NS
			6 df, total chi-square		21.88	P < .005

Table VII-15. Awareness of Students that School Participated in SWTP: Percentages of Students Reporting Indicated Frequencies of Talking with Teachers or Counselors About Standardized Test Results Who Gave Indicated Answers to the Question, "Does Your School Give the Tests of the Illinois Statewide High School Testing Program?" Shown Separately for Students Who Had and Had Not Visited a Counselor.

Talked with teachers or counselors about test results	Awareness					
	No or uncertain	Yes	Total	N	Chi-square	
	Had visited a counselor					
Frequently	23	77	100	170		
Sometimes	30	70	100	272		
Rarely or never	33	67	100	186		
	29	71	100	628	5.26	P < .077
	Had not visited a counselor					
Frequently	25	75	100	57		
Sometimes	28	72	100	158		
Rarely or never	44	56	100	210		
	36	64	100	425	13.45	P < .005
			4 df, total chi-square		18.71	P < .005

Table VII-16. Awareness of Students that School Participated in SWTP: Percentages of Students Reporting Indicated Frequencies of Talking with Teachers or Counselors About Standardized Test Results Who Gave Indicated Answers to the Question, "Does Your School Give the Tests of the Illinois Statewide High School Testing Program?" Shown Separately for Indicated Counselor-Student Ratios of Schools.

Talked with teachers or counselors about test results	Awareness: No or uncertain	Awareness: Yes	Total	N	Chi-square
Couns.-stud. ratio .00323 - .00794					
Frequently	16	84	100	92	
Sometimes	27	73	100	149	
Rarely or never	36	64	100	123	
	27	73	100	364	10.53 P < .006
Couns.-stud. ratio .00168 - .00322					
Frequently	25	75	100	69	
Sometimes	26	74	100	133	
Rarely or never	38	62	100	116	
	30	70	100	318	6.54 P < .04
Couns.-stud. ratio zero - .00167					
Frequently	28	72	100	61	
Sometimes	37	63	100	139	
Rarely or never	45	55	100	149	
	39	61	100	349	5.09 P < .083
				6 df, total chi-square	22.16 P < .005

awareness of the SWTP were not nearly as strong between college-preparatory students and students in other curricula (Tables VII-17 and 18) as they were in the case of awareness of standardized tests in general; it seemed unprofitable to carry that particular analysis further.

In the case of the specific awareness of the Illinois Testing Program, it appears that the variable of talking with faculty about test results was particularly important, more so than either counselor-student ratio or visiting the counselor. Interestingly, the effects of this variable on awareness of the SWTP seemed to be strongest among students of high academic aptitude (Table VII-14), among students in schools of high counselor-student ratio (Table VII-16), but among students who had not visited a counselor (Table VII-15). However, the difference in strength of relation among students who had visited a counselor, on the one hand, and those who had not, on the other hand, may have been a random difference; the difference between the two sections of Table VII-15 is not remarkable and the pattern is contrary to that in other similar tables we have seen.

Unlike the awareness of students concerning standardized tests in general (Tables VII-6 and 7), the awareness of students about the SWTP specifically did not show a strong or systematic relation with the curriculum of the student. The relation among males (Table VII-17) seems fitful, and the relation among females (Table VII-18) was not significant. It did not seem profitable to carry the analysis further among males and females.

In summary, awareness of the SWTP by name was not found significantly related to counselor-student ratio (Table VII-12) nor to

Table VII-17. Awareness of Students that School Participated in SWTP -- Males Only: Percentages of Boys in Indicated Curricula Who Gave Indicated Answers to the Question, "Does Your School Give the Tests of the Illinois Statewide High School Testing Program?" Shown Separately for Three Levels of Academic Aptitude.

	Awareness					
Curriculum	No or uncertain	Yes	Total	N	Chi-square	
High DAT						
College preparatory	26	74	100	127		
Other	34	66	100	29		
	28	72	100	156	0.48	NS
Middle DAT						
College preparatory	20	80	100	95		
Other	35	65	100	72		
	26	74	100	167	8.17	P < .01
Low DAT						
College preparatory	22	78	100	37		
Other	31	69	100	109		
	29	71	100	146	0.81	NS
		3 df, total chi-square			9.46	P < .027

Table VII-18. Awareness of Students that School Participated in SWTP -- Females Only: Percentages of Girls in Indicated Curricula Who Gave Indicated Answers to the Question, "Does Your School Give the Tests of the Illinois Statewide High School Testing Program?" Shown Separately for Three Levels of Academic Aptitude.

Curriculum	Awareness: No or uncertain	Awareness: Yes	Total	N	Chi-square	
High DAT						
College preparatory	31	69	100	138		
Other	34	66	100	50		
	32	68	100	188	0.04	NS
Middle DAT						
College preparatory	21	79	100	71		
Other	32	68	100	114		
	28	72	100	185	1.94	NS
Low DAT						
College preparatory	31	69	100	36		
Other	46	54	100	169		
	43	57	100	205	2.33	NS
		3 df, total chi-square			4.31	NS

visiting the counselor (Table VII-13). Awareness of the SWTP was significantly related, however, to talking with faculty about test results (Tables VII-14, 15, 16) even when controlled on other variables.

Conveying Standardized Test Results to Parents

Another feature of the school's guidance program of which students might have been more or less aware was that of conveying standardized test results to parents; more precisely, we could look to see how many students were correct about whether the school gave standardized test results (in some form) to parents. Principals, counselors, teachers, and students were asked whether the school gave standardized test results to parents and, if so, in what manner this was done. We took the responses of principal and counselor as representing the actual fact of the matter and classified a school as one in which test results were given to parents if both counselor and principal agreed that this was so. Figured in this way, 32 of our 38 schools gave test results to parents and 6 did not. We then ascertained whether the answer of each student was correct by comparing his answer with what we took to be the facts of the case. Of 921 students responding to the question, 39 percent were correct (in answering yes or no as the case might be), 24 percent answered that they were uncertain, and 37 percent were incorrect in their answers.

Correctness Whether Yes or No

What we want to know, of course, is whether the students in schools of higher counselor-student ratios were more often correct than students in schools of lower ratios. Table VII-19 shows that this was true, and very strongly true at least among students of middle and high academic aptitude, though students of low academic aptitude followed the same trend. Furthermore, Table VII-20 shows that the relation between counselor-student ratio and correctness about whether parents received standardized test results held within all frequencies of talking with teachers or counselors about test results.

At the same time, it can be seen from the sub-totals in Table VII-20 that correctness was associated with frequency of talking with teachers or counselors about test results; 52 percent of the students who talked with teachers or counselors frequently gave correct answers while only 26 percent of those who talked with teachers or counselors rarely or never gave correct answers. This relation, controlled for academic aptitude, is explicitly displayed in Table VII-21 where it can be seen that the relation with talking with teachers remained strong.

Oddly enough, visiting the counselor did not show a significant relation -- when controlled for academic aptitude -- with correctness about whether test results were given to parents. The distributions of visiting the counselor against correctness, first controlled for academic aptitude and second for talking with teachers or counselors about test results, are shown in Tables VII-22 and 23 respectively.

We shall see in a later chapter that the presence of counselors seemed to stimulate teachers to greater activity related to guidance. This may give us a clue to the pattern of results we have seen in respect to the correctness of students as to whether the school gave test results

Table VII-19. Correctness of Students as to Whether School Gave Test Results to Parents: Percentages of Students in Schools with Indicated Counselor-Student Ratios Who Were of Indicated Correctness in Stating Whether School Gave Standardized Test Results to Parents, Shown Separately for Three Levels of Academic Aptitude.

	Correctness						
Counselor-student ratio	No	Student uncertain	Yes	Total	N	Chi-square	
			High DAT				
.00323 - .00794	19	19	62	100	139		
.00168 - .00322	31	22	47	100	78		
Zero - .00167	44	27	29	100	80		
	29	22	49	100	297	17.45	P < .005
			Middle DAT				
.00323 - .00794	27	27	46	100	118		
.00168 - .00322	24	28	48	100	83		
Zero - .00167	44	32	24	100	103		
	32	29	39	100	304	15.65	P < .005
			Low DAT				
.00323 - .00794	46	23	31	100	83		
.00168 - .00322	44	24	32	100	93		
Zero - .00167	59	24	17	100	131		
	51	23	26	100	307	8.97	NS
			12 df, total chi-square			42.07	P < .001

Table VII-20. Correctness of Students as to Whether School Gave Test Results to Parents: Percentages of Students in Schools with Indicated Counselor-Student Ratios Who Were of Indicated Correctness in Stating Whether School Gave Standardized Test Results to Parents, Shown Separately for Students Who Reported Indicated Frequencies of Talking to Teachers or Counselors About Standardized Test Results.

Counselor-student ratio	Correctness			Total	N	Chi-square	
	No	Student uncertain	Yes				
Talked with teachers or counselors frequently							
.00323 - .00794	19	18	63	100	84		
.00168 - .00322	29	21	50	100	56		
Zero - .00167	42	21	37	100	57		
	28	20	52	100	197	12.14	P < .02
Talked sometimes							
.00323 - .00794	22	21	57	100	138		
.00168 - .00322	28	29	43	100	101		
Zero - .00167	48	29	23	100	116		
	32	26	42	100	355	33.41	P < .001
Talked rarely or never							
.00323 - .00794	43	28	29	100	108		
.00168 - .00322	45	22	33	100	90		
Zero - .00167	53	30	17	100	129		
	47	27	26	100	327	9.20	P < .058
			12 df, total chi-square			54.75	P < .001

Table VII-21. Correctness of Students as to Whether School Gave Test Results to Parents: Percentages of Students Reporting Indicated Frequencies of Talking with Teachers or Counselors About Standardized Test Results Who Were of Indicated Correctness in Stating Whether School Gave Standardized Test Results to Parents, Shown Separately for Three Levels of Academic Aptitude.

Talked with teachers or counselors about test results	Correctness				
	No or uncertain	Yes	Total	N	Chi-square
	High DAT				
Frequently	38	62	100	85	
Sometimes	54	46	100	131	
Rarely or never	62	38	100	76	
	51	49	100	292	10.64 P < .01
	Middle DAT				
Frequently	49	51	100	70	
Sometimes	49	51	100	108	
Rarely or never	79	21	100	117	
	61	39	100	295	26.19 P < .001
	Low DAT				
Frequently	69	31	100	42	
Sometimes	71	29	100	116	
Rarely or never	78	22	100	134	
	74	26	100	292	2.60 NS
			6 df, total chi-square		39.43 P < .001

Table VII-22. Correctness of Students as to Whether School Gave Test Results to Parents: Percentages of Students Who Had and Had Not Visited a Counselor Who Were of Indicated Correctness in Stating Whether School Gave Standardized Test Results to Parents, Shown Separately for Three Levels of Academic Aptitude.

Visited counselor	Correctness: No or uncertain	Correctness: Yes	Total	N	Chi-square	
High DAT						
Yes	45	55	100	189		
No	61	39	100	108		
	51	49	100	297	5.89	P < .02
Middle DAT						
Yes	58	42	100	181		
No	65	35	100	123		
	61	39	100	304	1.24	NS
Low DAT						
Yes	75	25	100	162		
No	74	26	100	145		
	74	26	100	307	*	NS
		3 df, total chi-square			7.13	NS

* Counted as zero because direction of disproportionality is contrary to other sub-tables.

Table VII-23. Correctness of Students as to Whether School Gave Test Results to Parents: Percentages of Students Who Had and Had Not Visited a Counselor Who Were of Indicated Correctness in Stating Whether School Gave Standardized Test Results to Parents, Shown Separately for Students Reporting Indicated Frequencies of Talking with Teachers or Counselors About Standardized Test Results.

Visited counselor	Correctness: No or uncertain	Correctness: Yes	Total	N	Chi-square	
Talked with teachers or counselors frequently						
Yes	46	54	100	149		
No	54	46	100	48		
	48	52	100	197	0.61	NS
Talked sometimes						
Yes	55	45	100	233		
No	64	36	100	122		
	58	42	100	355	2.30	NS
Talked rarely or never						
Yes	76	24	100	146		
No	73	27	100	181		
	75	25	100	327	0.16	NS
3 df, total chi-square					3.07	NS

to parents. It may be that a great many schools involved the teacher in the matter of getting the results of standardized tests home to parents. If so, students would more often be aware that this was done if they were in schools where teachers were more active about guidance and these would be likely to be the schools where there were relatively more counselors. The counselor himself, however, might rarely be involved directly in the distribution of test results to parents, and therefore the awareness of the student of the transmission of test results to parents might be little associated with the student's visits to the counselor.

In sum, counselor-student ratio was strongly associated with the correctness of students as to whether the school gave test results to parents (Tables VII-19 and 20). The pattern of results, however, suggests that the effect may have been indirect; correctness was not associated with visiting the counselor (Tables VII-22 and 23) but was associated with talking with faculty about test results (Table VII-21).

In almost every chapter, I have displayed tabulations showing important associations between teacher activity and the amount of student response to various aspects of the guidance program in the school. We saw at the outset (Table III-18) that counselor-student ratio was associated with the level of guidance activity of teachers, and we have now come across a strong hint that an important effect of the relatively higher counselor-student ratios might have been to stimulate more activity on the part of the faculty. I shall offer more evidence for this hypothesis in Chapter XI.

As well as asking whether the school gave results of standardized tests to parents, we also asked students whether the school gave test results to them. However, the number of students who were incorrect in answers amounted only to 14 percent, and most of these were in the low range of academic aptitude. The result was that the frequencies in some of the classifications became too small to perform any meaningful analysis.

Awareness as to Manner

In addition to asking merely whether standardized test results were given to parents, the questionnaires went on to ask for a brief indication, from those who answered the first question "yes," of the manner or method by which test results were conveyed to parents (see item 33, Appendix II-B). Altogether, taking both the first and second questions into consideration, five types of answers were codable and occurred in some quantity:

(1) No; test results not given to parents.

(2) Uncertain whether test results were given to parents.

(3) Respondent said yes test results were given to parents, but added no information about the manner of conveying them.

(4) Respondent described some manner of conveying test results but a manner which required no particular discretion, regulation, or organized effort on the part of the school. Typical answers under this code were that anyone who wishes may have results, results available if requested, available to any who are interested, and so forth.

(5) Respondent described some manner of conveying test results which obviously required some organization of effort, some exercise of discretion, or some regulation of the distribution of test results. Typical answers coded here mentioned particular classes of persons to whom test results were available, particular persons in the school authorized to give out test results, differences in availability of different kinds of tests, form (written, in interview, in conference) in which

> test results could be transmitted, contingency of transmission on potential understanding by parents, and so forth. For brevity, answers under this code will hereafter be called answers specifying a "regulated manner" of disseminating test results or, more briefly yet, "regulated" answers.

In this section of this chapter, we are interested in whether students perceived more about the dissemination of test results to parents than merely whether it was done; we are interested in whether they were able to perceive it when the school took pains to convey test results in a "regulated manner." Table VII-24 tabulates the types of answers given by students in those schools which did convey test results to parents. The minimal correct answer by students included in this table would have been "yes"; furthermore, one would expect that some students would have been able to specify the manner in which test results were disseminated. The last line of the table shows that 38 percent of the students were of the opinion that test results were not given to parents and 23 percent were uncertain whether test results were given. About two-fifths (39 percent) of the students were aware that standardized test results were given to parents. If a student was aware that test results were indeed conveyed to parents, the chances were very good that he was also aware that this was done in some regulated manner; only 6 percent of these students were aware merely that test results were given or were available, but 33 percent were further aware of some special effort or discretion exercised by the school in disseminating the test results.

Although I have stated that 33 percent of the students were aware that the schools did indeed convey test results to parents in a regulated manner, I have not yet explained that it was true that the schools did

Table VII-24. Awareness of Students of Manner of Giving Test Results to Parents: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Gave Indicated Types of Answers When Asked Whether and How Standardized Test Results Were Given to Parents. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to parents.)

	Type of answer					
Counselor-student ratio	No; test results not given to parent	Uncertain whether given	Yes; no special manner specified	Yes; regulated manner specified	Total	N
.00323 - .00794	30	21	7	42	100	340
.00168 - .00322	36	21	3	40	100	253
Zero - .00167	51	26	7	16	100	310
	38	23	6	33	100	903

When two middle columns are collapsed, chi-square = 62.40; 4 df, $P < .0001$.

indeed do so. In fact, principals and counselors in all the schools included in Table VII-24 not only said that their schools gave test results to parents but went on to specify some regulated manner in which this was done. It is therefore impressive that Table VII-24 shows much larger proportions of students in schools of higher counselor-student ratios able to specify some regulated manner in which the school conveyed test results to parents while smaller proportions were able to do this in schools of lower counselor-student ratios. This is tentative evidence that the presence of relatively more counselors made a difference in the awareness of students about this aspect of the guidance program.

This interpretation of Table VII-24, however, encounters at least two difficulties. In the first place, we might have biased the analysis somehow in leaving out those schools in which test results were not given to parents. It might have been that there was some kind of trend over counselor-student ratios which we exaggerated or depressed by dropping out those schools which did not give test results to parents. But this possibility can be put aside, as Table VII-25 demonstrates. There we see that there was no significant relation between counselor-student ratio and whether the school gave test results to parents. Table VII-25 utilizes not merely those schools in which we studied students but all the schools in the study.

The second difficulty arises because there are two kinds of conditions which might have existed among those schools which did give test results to parents. One possibility was that schools of all counselor-student ratios used methods of disseminating test results to

Table VII-25. Conveying Test Results to Parents: Percentages of Principal in Schools of Indicated Counselor-Student Ratios Who Reported That School Did and Did Not Give Standardized Test Results to Parents.

Counselor-student ratio	Give test results to parents? No	Yes	Total	N
.0050 or over	6	94	100	58
.0030 - .0049	15	85	100	68
.0020 - .0029	12	88	100	68
.0010 - .0019	15	85	100	62
Zero - .0009	18	82	100	251
	16	84	100	507

4 df, chi-square = 3.75, NS.

parents which were regulated in about equal degrees; that is, that the extent of special arrangements and care was about the same in the several ranges of counselor-student ratio. In this case, it would not be the special arrangements and regulations themselves which more frequently impressed the students in schools of higher counselor ratio compared to students in schools of low; the results of Table VII-24 would have to mean that there was something beyond the dissemination arrangements themselves--perhaps special efforts of the counselors--which drew the attention of students to the dissemination processes.

But the condition in schools which gave test results to parents could have been otherwise. Schools with higher counselor-student ratios compared to those of low could have been taking greater pains to put structure on their methods of disseminating test results to parents. This could have been true even within the schools represented in Table VII-24. Although that table included only schools which disseminated test results in a regulated manner, our coding of "regulated" responses on the part of principal and counselor did not differentiate the degree of elaboration to which the school carried its special procedures in disseminating test results. There might have been considerable variation so that the methods of dissemination in one school might have been much more evident to the students than the methods in another.

If there were differences between schools of different counselor-student ratios in the extent of "regulation" used in disseminating test results, it would be reasonable to expect these differences to appear in the number of schools whose principals gave "regulated" answers even according to our simple code if enough schools were to be tabulated. That is, supposing that the dissemination of test results to parents was much less regulated in schools of lower counselor-student ratios, we should expect that the regulation would be so slight in some of these that the principals would give answers which would less often be coded as "regulated," while in schools of higher counselor-student ratios answers of principals would more often be coded as "regulated" because the extent of regulation would more often be broader and would more often result in the principal giving an answer which we would have coded as "regulated." Following this reasoning, we looked at all schools in the study (not just those in which students were studied) in which principals said that test results were given to parents and made the tabulation shown in Table VII-26. Here we see that the percentages of "regulated" answers given by principals were not independent of counselor-student ratio. The relation between counselor-student ratio and frequency of regulated dissemination methods was not monotonic, but clearly there was a tendency for fewer regulated methods to appear in schools of the lowest bracket of counselor-student ratio while regulated methods occurred more frequently among schools with counselor-student ratios lying above the median of the range; this tendency was significant beyond the .01 level.

In other words, the evidence argues that there was indeed more activity which could impress itself upon the attention of students in schools of the higher counselor-student ratios compared to schools of lower ratios. Presumably, this trend existed at least to some extent among the schools represented in Table VII-24. Taking this to have been

Table VII-26. Manner of Conveying Test Results to Parents in Schools Which Did So: Percentages of Principals in Schools of Indicated Counselor-Student Ratios Who Gave Indicated Types of Answers When Asked How School Gave Standardized Test Results to Parents.

Counselor-student ratio	Type of answer: Yes; no special manner specified	Type of answer: Yes; regulated manner specified	Total	N
.0050 or over	21	79	100	52
.0030 - .0049	12	88	100	58
.0020 - .0029	8	92	100	60
.0010 - .0019	21	79	100	53
Zero - .0009	28	72	100	205
	21	79	100	428

4 df, chi-square = 13.89, $P < .01$

the case, we should interpret Table VII-24 as meaning that more students were aware of this aspect of the guidance program (conveying test results to parents) in schools where there was more activity of which to be aware. Generalizing more broadly, we would take this as evidence that where people are busy with guidance activities which can be noticed by students, students will notice them. This may seem to be an unimpressive conclusion, but the question of whether students in our sample did notice what was going on is the burden of this chapter. It should be remembered that one cannot always come to this conclusion. In a previous section where we looked at awareness of the students whether the school participated in the SWTP, for example, we found that neither counselor-student ratio nor visiting the counselor was associated with such awareness.

I have argued that Table VII-24 shows us that students were more often aware of the manner in which test results were conveyed to parents when they were in schools where the manner of doing this was move visible. But Table VII-24 was a very simple analysis, and we have often seen that relations involving the knowledge or awareness of the student were affected by academic aptitude, talking to teachers, and other variables. It is therefore necessary to perform the analysis of Table VII-24 again but with other variables as controls.

Tables VII-27 and 28 divide the answers of students into regulated answers on the one hand and all other types on the other hand. The relation between counselor-student ratio and awareness of a regulated manner of disseminating test results remained strong both when controlled for academic aptitude (Table VII-27) and when controlled for frequency of

Table VII-27. **Awareness of Students of Manner of Giving Test Results to Parents: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Did and Did Not Specify Some Regulated Manner When Asked Whether and How School Gave Standardized Test Results to Parents, Shown Separately for Three Levels of Academic Aptitude. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to parents.)**

	Manner of conveying test results					
Counselor-student ratio	Other	Regulated	Total	N	Chi-square	
		High DAT				
.00323 - .00794	47	53	100	136		
.00168 - .00322	54	46	100	72		
Zero - .00167	73	27	100	85		
	56	44	100	293	16.46	P < .001
		Middle DAT				
.00323 - .00794	59	41	100	115		
.00168 - .00322	51	49	100	80		
Zero - .00167	84	16	100	102		
	66	34	100	297	25.63	P < .001
		Low DAT				
.00323 - .00794	72	28	100	81		
.00168 - .00322	69	31	100	85		
Zero - .00167	84	16	100	128		
	76	24	100	294	7.71	P < .03
		6 df, total chi-square			49.09	P < .001

Table VII-28. Awareness of Students of Manner of Giving Test Results to Parents: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Did and Did Not Specify Some Regulated Manner When Asked Whether and How School Gave Standardized Test Results to Parents, Shown Separately for Students Reporting Indicated Frequencies of Talking with Teachers or Counselors About Test Results. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to parents.)

Counselor-student ratio	Manner of conveying test results Other	Regulated	Total	N	Chi-square	
Talked with teachers or counselors frequently						
.00323 - .00794	46	54	100	81		
.00168 - .00322	50	50	100	50		
Zero - .00167	73	27	100	55		
	55	45	100	186	10.85	P < .01
Talked sometimes						
.00323 - .00794	52	48	100	134		
.00168 - .00322	57	43	100	92		
Zero - .00167	84	16	100	113		
	64	36	100	339	29.97	P < .001
Talked rarely or never						
.00323 - .00794	72	29	100	107		
.00168 - .00322	68	32	100	88		
Zero - .00167	87	13	100	125		
	77	23	100	320	13.03	P < .005
		6 df, total chi-square			53.85	P < .001

talking with teachers about test results (Table VII-28). There was no remarkable difference between the results in the several levels of academic aptitude nor between students who talked with different frequencies with teachers.

As in previous sections of this chapter, we see again in Tables VII-29 and 30 that the awareness of the student was not affected by visiting the counselor. Awareness of manner of giving test results to parents was, however, associated with frequency of talking to teachers or counselors about test results (Table VII-31).

In summary, awareness by students of the manner of disseminating test results to parents was associated with counselor-student ratio (Tables VII-24, 27, 28) and with frequency of talking with faculty about test results (Table VII-31). It was not associated with visiting the counselor (Tables VII-29, 30). This pattern of results is the same as that which we saw in the previous section in connection with the correctness of the student about whether test results were conveyed to parents at all. Again, an indirect effect of higher counselor-student ratios is suggested -- that more counselor activity spurs more faculty activity which, in turn, has its effect upon the student.

Conveying Standardized Test Results to Students

Only one student among almost nine hundred in the schools where test results actually were given to students said he was "uncertain" whether test results were given to students in his school. The rest said "yes" or "no." As can be seen from the totals in Table VII-32, 14 percent were unaware that test results were given to students; another 14 percent were aware that it was done but specified no regulated manner while

Table VII-29. Awareness of Students of Manner of Giving Test Results to Parents: Percentages of Students Who Had and Had Not Visited a Counselor Who Did and Did Not Specify Some Regulated Manner When Asked Whether and How School Gave Standardized Test Results to Parents, Shown Separately for Three Levels of Academic Aptitude. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to parents.)

Visited counselor	Manner of conveying test results: Other	Manner of conveying test results: Regulated	Total	N	Chi-square	
		High DAT				
Yes	55	45	100	184		
No	65	35	100	99		
	58	42	100	283	2.13	NS
		Middle DAT				
Yes	62	38	100	177		
No	71	29	100	120		
	66	34	100	297	1.91	NS
		Low DAT				
Yes	77	23	100	153		
No	75	25	100	141		
	76	24	100	294	*	NS
		3 df, total chi-square			4.04	NS

* Counted as zero because direction of disproportionality is contrary to other sub-tables.

Table VII-30. Awareness of Students of Manner of Giving Test Results to Parents: Percentages of Students Who Had and Had Not Visited a Counselor Who Did and Did Not Specify Some Regulated Manner When Asked Whether and How School Gave Standardized Test Results to Parents, Shown Separately for Students Reporting Indicated Frequencies of Talking with Teachers or Counselors About Test Results. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to parents.)

Visited counselor	Manner of conveying test results		Total	N	Chi-square	
	Other	Regulated				
Talked with teachers or counselors frequently						
Yes	53	47	100	141		
No	60	40	100	45		
	55	45	100	186	0.39	NS
Talked sometimes						
Yes	61	39	100	223		
No	70	30	100	116		
	64	36	100	339	2.46	NS
Talked rarely or never						
Yes	79	21	100	146		
No	75	25	100	174		
	77	23	100	320	*	NS
		3 df, total chi-square			2.85	NS

* Counted as zero because direction of disproportionality is contrary to other sub-tables.

Table VII-31. Awareness of Students of Manner of Giving Test Results to Parents: Percentages of Students Reporting Indicated Frequencies of Talking to Teachers or Counselors About Standardized Test Results Who Did and Did Not Specify Some Regulated Manner When Asked How School Gave Standardized Test Results to Parents, Shown Separately for Three Levels of Academic Aptitude. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to parents.)

	Manner of conveying test results					
Talked about test results	Other	Regulated	Total	N	Chi-square	
		High DAT				
Frequently	56	44	100	68		
Sometimes	54	46	100	107		
Rarely or never	82	18	100	115		
	65	35	100	290	23.00	P < .001
		Middle DAT				
Frequently	49	51	100	84		
Sometimes	65	35	100	130		
Rarely or never	64	36	100	72		
	60	40	100	286	7.08	P < .05
		Low DAT				
Frequently	71	29	100	38		
Sometimes	73	27	100	107		
Rarely or never	81	19	100	135		
	76	24	100	280	2.89	NS
		6 df, total chi-square			32.97	P < .001

Table VII-32. Awareness of Students of Manner of Giving Test Results to Students: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Gave Indicated Types of Answers When Asked Whether and How Standardized Test Results Were Given to Students. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to students.)

	Type of answer				
Counselor-student ratio	No; test results not given to stud.	Yes; no special manner specified	Yes; regulated manner specified	Total	N
.00323 - .00794	18	15	67	100	342
.00168 - .00322	9	11	80	100	275
Zero - .00167	15	15	70	100	280
	14	14	72	100	897

4 df, chi-square = 16.01, $P < .01$

72 percent mentioned some regulated manner of distributing the test results.

Interpreting the pattern in the table is difficult. The .01 level of statistical significance persuades us to treat the results in the table as non-random; yet the trend in the table is non-monotonic (the percentage of "regulated" answers in schools of the lowest counselor-student ratios and the percentage in schools of the highest counselor-student ratios were both less than the percentage in schools of middle counselor-student ratios), and the strongest part of the trend is contrary to what we would have expected. Before going further with these statistics, let us turn to what the principals said about distributing test results to students in their schools.

Table VII-33, which treats all the schools in the sample, shows that there was no significant relation between counselor-student ratio and whether test results were given to students according to the reports of the principals. Within schools which did give test results to students, the reports of principals concerning the manner of doing so are tabulated in Table VII-34; the table indicates that there was no significant relation between counselor-student ratio and the use of "regulated" methods of disseminating test results to students. These figures persuade us that a trend in the responses of the students in our sample is not to be explained by any corresponding trend in the actual practices in the schools.

Let us turn to Tables VII-35 and 36 which control our original analysis respectively on academic aptitude and on talking with teachers

Table VII-33. Conveying Test Results to Students: Percentages of Principals in Schools of Indicated Counselor-Student Ratios Who Reported That School Did and Did Not Give Standardized Test Results to Students.

Counselor-student ratio	Give test results to students? No	Yes	Total	N
.0050 or over	7	93	100	58
.0030 - .0049	2	98	100	67
.0020 - .0029	7	93	100	67
.0010 - .0019	14	86	100	63
Zero - .0009	12	88	100	252
	10	90	100	507

4 df, chi-square = 9.05, NS

Table VII-34. Manner of Conveying Test Results to Students in Schools Which Did So: Percentages of Principals in Schools of Indicated Counselor-Student Ratios Who Gave Indicated Types of Answers When Asked How School Gave Standardized Test Results to Students.

Counselor-student ratio	Type of answer: Yes; no special manned specified	Yes; regulated manner specified	Total	N
.0050 or over	11	89	100	54
.0030 - .0049	21	79	100	66
.0020 - .0029	8	92	100	62
.0010 - .0019	6	94	100	54
Zero - .0009	11	89	100	222
	12	88	100	458

4 df, chi-square = 7.49, NS

Table VII-35. Awareness of Students of Manner of Giving Test Results to Students: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Did and Did Not Specify Some Regulated Manner When Asked Whether and How School Gave Standardized Test Results to Students, Shown Separately for Three Levels of Academic Aptitude. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to students.)

	Manner of conveying test results					
Counselor-student ratio	Other	Regulated	Total	N	Chi-square	
		High DAT				
.00323 - .00794	24	76	100	139		
.00168 - .00322	9	91	100	74		
Zero - .00167	23	77	100	65		
	20	80	100	278	*	
		Middle DAT				
.00323 - .00794	31	69	100	116		
.00168 - .00322	23	77	100	92		
Zero - .00167	28	72	100	96		
	28	72	100	304	1.57	NS
		Low DAT				
.00323 - .00794	52	48	100	80		
.00168 - .00322	26	74	100	94		
Zero - .00167	34	66	100	114		
	36	64	100	288	14.09	P < .001
		6 df, total chi-square			15.66	P < .02

* Counted in the total as zero because direction of disproportionality is not consistent with other sub-tables. Chi-square = 7.39, P < .05.

Table VII-36. Awareness of Students of Manner of Giving Test Results to Students: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Did and Did Not Specify Some Regulated Manner When Asked Whether and How School Gave Standardized Test Results to Students, Shown Separately for Students Reporting Indicated Frequencies of Talking with Teachers or Counselors About Test Results. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to students.)

	Manner of conveying test results					
Counselor-student ratio	Other	Regulated	Total	N	Chi-square	
Talked with teachers or counselors frequently						
.00323 - .00794	17	83	100	81		
.00168 - .00322	16	84	100	51		
Zero - .00167	19	81	100	52		
	17	83	100	184	0.27	NS
Talked sometimes						
.00323 - .00794	30	70	100	135		
.00168 - .00322	14	86	100	104		
Zero - .00167	24	76	100	100		
	24	76	100	339	7.71	P < .03
Talked rarely or never						
.00323 - .00794	46	54	100	109		
.00168 - .00322	29	71	100	100		
Zero - .00167	38	62	100	112		
	38	62	100	321	6.58	P < .05
	6 df, total chi-square				14.56	P < .05

about test results. In these tables, we see that the non-monotonicity persisted at least to some extent within every level of academic aptitude and within every frequency of talking with teachers about test results. Still the overall relation in both tables remained significant; and a certain consistency appeared with earlier findings since the strongest effects were to be seen among students of the lowest academic aptitude range and among students who talked the less frequently with teachers about test results.

The last time we ran into a result clearly contrary to expectation was in Chapter IV in connection with students' knowledge about the duties required by the occupation. There we found that the results were contrary to expectation even across levels of academic aptitude. We were able to make sense of those results by looking at the distributions of the students' responses in the different curricula.

In the present case, the results are not as persistently contrary to expectation. For example, it can be seen from the totals in Table VII-35 that students in the higher levels of academic aptitude more frequently gave "regulated" answers than students at the lower levels of academic aptitude; 80 percent of students of high DAT gave "regulated" answers, 72 percent of middle-DAT students, and 64 percent of low-DAT students. The pattern in Table VII-36 is similar; 83 percent of students who talked with teachers frequently gave "regulated" answers, 76 percent of those who talked sometimes, and 62 percent of those who talked rarely or never.

It seemed to us that it might still be worth looking into differences among curricula, however, because of some other relations among the several variables involved here. We already knew that DAT scores were significantly higher among students in college-preparatory curricula than among students in other curricula (Table III-15). Furthermore, talking with faculty about test results was significantly more frequent among the students in college-preparatory curricula than among those in others (Table VII-37) while at the same time students in one curricula seemed no more often to have visited a counselor than students in another (Table VII-38).

With such complex interrelations existing, it seemed worth while to take the curriculum of the student into the analysis to see whether, after doing so, the non-monotonic relations we saw in Tables VII-32, 35, and 36 would still persist -- or indeed, whether any significant relation would still exist.

As it turned out, the significant relations in Tables VII-35 and 36 vanished when the students' responses were examined first among college-preparatory students and then among students in other curricula. But let me be more specific. Since we suspected that giving "regulated" answers was associated with talking with teachers or counselors about test results, we controlled the analysis both by this latter variable and by curriculum; Table VII-39 shows the results. The table shows that no significant relation existed between counselor-student ratio and the frequency with which students gave "regulated" answers when we took into account both the curriculum of the student and the frequency with which he reported talking to teachers or counselors about standardized test results. Furthermore, as shown at appropriate places in the table,

Table VII-37. Percentages of Students in the Several Curricula Who Reported Indicated Frequencies of Talking with Teachers or Counselors About Standardized Test Results.

	Frequency of talking about test results					
Curriculum	Never	Rarely	Sometimes	Frequently	Total	N
College preparatory	14	16	40	30	100	334
Mixed	19	20	45	16	100	308
Comm'l and vocat'l	26	17	39	18	100	254
	19	18	41	22	100	896

6 df, chi-square = 33.38, P < .001

Table VII-38. Percentages of Students in the Several Curricula Who Reported Having Visited a Counselor.

	Visited counselor			
Curriculum	No	Yes	Total	N
College preparatory	36	64	100	311
Commercial	41	59	100	100
Vocational	40	60	100	135
Mixed	46	54	100	291
	41	59	100	837

3 df, chi-square = 5.85, NS

Table VII-39. Awareness of Students of Manner of Giving Test Results to Students: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Did and Did Not Specify Some Regulated Manner When Asked How School Gave Standardized Test Results to Students, Shown Separately (a) for Frequency of Talking with Teachers or Counselors About Standardized Test Results and (b) for College-Preparatory Curricula and Other Curricula. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to students.)

	Manner of conveying test results					
Counselor-student ratio	Other	Regulated	Total	N	Chi-square	
College preparatory and talked frequently or sometimes						
.00323 - .00794	21	79	100	146		
.00168 - .00322	9	91	100	81		
Zero - .00167	21	79	100	76		
	18	82	100	303	5.81	NS
College preparatory and talked rarely						
.00323 - .00794	18	82	100	22		
.00168 - .00322	14	86	100	22		
Zero - .00167	24	76	100	17		
	18	82	100	61	0.71	NS
College preparatory and never talked						
.00323 - .00794	59	41	100	27		
.00168 - .00322	33	67	100	15		
Zero - .00167	29	71	100	21		
	43	57	100	63	3.07	NS
Total chi-square for college preparatory, 6 df					9.59	NS

(continued)

Table VII-39 continued.

Counselor-student ratio	Manner of conveying test results					
	Other	Regulated	Total	N	Chi-square	
Other curricula and talked frequently or sometimes						
.00323 - .00794	33	67	100	70		
.00168 - .00322	20	80	100	81		
Zero - .00167	25	75	100	80		
	26	74	100	231	3.47	NS
Other curricula and talked rarely						
.00323 - .00794	44	56	100	25		
.00168 - .00322	23	77	100	30		
Zero - .00167	42	58	100	36		
	36	64	100	91	1.36	NS
Other curricula and never talked						
.00323 - .00794	56	44	100	36		
.00168 - .00322	42	58	100	36		
Zero - .00167	47	53	100	36		
	48	52	100	108	1.35	NS
Total chi-square for other curricula, 6 df					6.18	NS
Total chi-square for freq. or some., 4 df					9.28	NS
Total chi-square for talked rarely, 4 df					2.07	NS
Total chi-square for never talked, 4 df					4.42	NS
Over-all chi-square, 10 df					15.77	NS

the trend was not significant among college-preparatory students with talking to teachers controlled, within students in other curricula with the same control, nor within students reporting any particular frequency of talking with faculty while curriculum was controlled. In sum, we have here a lack of evidence that students in schools of higher counselor-student ratios any more frequently gave "regulated" answers in connection with conveying test results to themselves than did students in schools of lower ratios.

Furthermore, as in previous sections, we received no comfort from the variable of visiting the counselor. Tables VII-40 and 41 show that there was no association between visiting the counselor and the frequency with which students gave "regulated" answers.

But this disappointing outcome need not plunge us into gloom. We have seen in this chapter that frequency of talking with the faculty at large about test results was an important predictor variable. This turned out to be the case here also. With the analysis controlled both on academic aptitude and on curriculum, frequency of talking with teachers and counselors exhibited significant relations with the percentages of "regulated" answers, as can be seen in Table VII-42. The relation turned out to be strongest among students of low DAT and among students who were not in college-preparatory curricula; this is no surprise. Moreover, the overall relation in the table remained significant beyond the .01 level.

Although direct measures of counselor availability (visiting the counselor and counselor-student ratio) failed to maintain significant relations with the awareness of students (in the mass) about the

Table VII-40. Awareness of Students of Manner of Giving Test Results to Students: Percentages of Students Who Had and Had Not Visited a Counselor Who Did and Did Not Specify Some Regulated Manner When Asked Whether and How School Gave Standardized Test Results to Students, Shown Separately for Three Levels of Academic Aptitude. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to students.)

Visited counselor	Manner of conveying test results: Other	Manner of conveying test results: Regulated	Total	N	Chi-square	
High DAT						
Yes	18	82	100	184		
No	22	78	100	94		
	20	80	100	278	0.30	NS
Middle DAT						
Yes	28	72	100	189		
No	28	72	100	115		
	28	72	100	304	0.00	NS
Low DAT						
Yes	32	68	100	156		
No	42	58	100	132		
	36	64	100	288	2.45	NS
		3 df, total chi-square			2.75	NS

Table VII-41. Awareness of Students of Manner of Giving Test Results to Students: Percentages of Students Who Had and Had Not Visited a Counselor Who Did and Did Not Specify Some Regulated Manner When Asked Whether and How School Gave Standardized Test Results to Students, Shown Separately for Students Reporting Indicated Frequencies of Talking to Teachers and Counselors About Test Results. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to students.)

	Manner of conveying test results					
Visited counselor	Other	Regulated	Total	N	Chi-square	
Talked with teachers or counselors frequently						
Yes	17	83	100	144		
No	17	83	100	40		
	17	83	100	184	0.00	NS
Talked sometimes						
Yes	21	79	100	228		
No	28	72	100	111		
	24	76	100	339	1.38	NS
Talked rarely or never						
Yes	40	60	100	154		
No	36	64	100	167		
	38	62	100	321	0.32	NS
		3 df, total chi-square			1.70	NS

Table VII-42. Awareness of Students of Manner of Giving Test Results to Students: Percentages of Students Reporting Indicated Frequencies of Talking to Teachers or Counselors About Standardized Test Results Who Did and Did Not Specify Some Regulated Manner When Asked How School Gave Standardized Test Results to Students, Shown Separately (a) for Three Levels of Academic Aptitude and (b) for College-Preparatory Curricula and Other Curricula. (Students omitted who were in schools where principal and counselor -- if any -- said test results were not given to students.)

	Manner of conveying test results					
Talked about test results	Other	Regulated	Total	N	Chi-square	
	High DAT and college preparatory					
Frequently	15	85	100	74		
Sometimes	21	79	100	91		
Rarely or never	26	74	100	53		
	20	80	100	218	2.44	NS
	High DAT and other curricula					
Frequ. or some.	13	87	100	38		
Rarely or never	30	70	100	20		
	19	81	100	58	1.45	NS
Total chi-square for high DAT, 3 df					3.89	NS
	Middle DAT and college preparatory					
Frequently	20	80	100	40		
Sometimes	15	85	100	55		
Rarely or never	28	72	100	47		
	20	80	100	142	2.17	NS
	Middle DAT and other curricula					
Frequently	21	79	100	28		
Sometimes	25	75	100	56		
Rarely or never	46	54	100	68		
	34	66	100	152	7.67	$P < .03$
Total chi-square for middle DAT, 4 df					9.84	$P < .05$

(continued)

Table VII-42 continued.

Talked about test results	Manner of conveying test results		Total	N	Chi-square	
	Other	Regulated				
	Low DAT and college preparatory					
Frequ. or some.	20	80	100	35		
Rarely or never	48	52	100	23		
	31	69	100	58	3.80	P < .06
	Low DAT and other curricula					
Frequently	13	87	100	30		
Sometimes	39	61	100	76		
Rarely or never	44	56	100	108		
	40	60	100	214	8.50	P < .02
Total chi-square for low DAT, 3 df					12.30	P < .01
Total chi-square for college preparatory, 5 df					8.41	NS
Total chi-square for other curricula, 5 df					17.62	P < .01
Over-all chi-square, 10 df					26.03	P < .01

particular methods used to convey standardized test results to them, we have nevertheless seen in this section that the awareness of the students was susceptible to guidance activity in the faculty at large. This sensitivity turned out to be particularly pronounced among students of the middle and low ranges of academic aptitude and among students who were in curricula other than the college preparatory. This is a pattern with which we became familiar in earlier chapters.

Summary

Our purpose in this chapter was simply to discover whether the availability of counselors was associated with the awareness of students that guidance activity was going on in their school. All but one of our criteria had to do with awareness of aspects of the testing program in the school. In general, we found evidence that counselor-student ratio or visiting the counselor was positively related to the students' awareness of some of these aspects, though not all. It will have been noticed that finding a connection between the availability of counselors and even such a criterion as simple awareness of activity (expressible verbally) was not as easy a thing as it might have seemed at the outset.

At the simplest level, we noted that in schools which had counselors, very high precentages of the students were aware that the counselors were there (Table III-8). The percentages, ranging from 89 to 97, were high enough so that our measure of counselor-student ratio could hardly be expected to show up significant differences between them.

Visiting the counselor turned out to be significantly related only to one of our criteria, that of awareness that the school administered standardized tests; but visiting the counselor was not sufficient by itself. Students more and less aware of test administration could be significantly separated only by looking at whether the student had visited a counselor along with his frequency of talking with faculty about test results (Tables VII-4 and 5). It also turned out that college-preparatory students were generally more aware of test administration than students in other curricula (Tables VII-6 and 7). For students not in college-preparatory curricula, awareness tended to be more frequent among students who had visited a counselor than among those who had not without regard to talking with faculty about test results (Tables VII-8 and 10) and this tendency was strongest among students of low academic aptitude.

When asked whether the school participated in the SWTP, students who reported more frequent talking with faculty about test results showed themselves to be the more aware that this was true than students who reported less frequent discussion of test results with faculty (Tables VII-14, 15, 16). Neither counselor-student ratio nor visiting the counselor was found to be related to this criterion (Tables VII-12 and 13).

Students were asked whether the school gave test results to parents and the correctness of their responses was examined. In addition, students were asked in what manner test results were conveyed to parents, and an analysis was made of the responses of students who were in schools where test results were conveyed to parents in structured and regulated ways. Counselor-student ratio was found to be strongly related to correctness about both these matters (whether and how) and o was frequency of talking with faculty about test results (Tables VII-19, 20, 21, 24, 27, 28, 31). These two criterion variables about conveying test results to parents were not, however, related to visiting the counselor (Tables VII-22, 23, 29, 30). In explanation of this pattern and in anticipation of some findings to be presented in a later chapter, the hypothesis was offered that an indirect effect of counselor-student ratio was operating; more activity by counselors spurred more activity in the faculty at large, and this in turn had its effect on the sensitivity of the students to the testing program.

Our final criterion in this chapter was the awareness of students of the manner in which test results were conveyed to *them*. This awareness was not found to be significantly related to counselor-student ratio when the relation was sought within categories of curriculum and frequency of talking to faculty about test results (Table VII-39). Nor was awareness of this feature of the testing program significantly related to visiting the counselor (Tables VII-40 and 41). This criterion was found, however, to be significantly related to frequency of talking to faculty about test results even when the analysis was controlled both for academic aptitude and curriculum (Table VII-42); the relation was strongest among students of low academic aptitude and among students not in college-preparatory curricula.

Let us tally the predictor variables which were found to be significantly related to our criterion variables concerning awareness of the testing aspect of the guidance program. Counselor-student ratio was related to two criterion variables: awareness of whether test results were given to parents and awareness of the manner in which they were conveyed. Visiting the counselor was related to one criterion: awareness of whether the school administered standardized tests at all. Frequency of talking to faculty about test results, however, was related to all the criteria. It was sufficient to predict two of them (whether school participated in SWTP and manner of conveying test results to students); moreover, it was a necessary multiple predictor for a third criterion (whether the school administered standardized tests). And in regard to the two remaining criteria (whether the school gave test results to parents and the manner of doing so) the variable of talking to faculty about tests was related to these criteria also. In regard to these last two criteria, that is, awareness could be significantly predicted either from counselor-student ratio or from talking with faculty.

We can conclude, it seems to me, that counselor activity showed some evidence of being associated with awareness of students about aspects of the testing program. Beyond this, however, it is again impressive that an index of guidance activity on the part of the general faculty showed up throughout the results of this chapter as having important effects on the responses of students. Again the implication is clear that the design of guidance services should carefully consider the possible functions of teachers in the total effort.

It might be well at this point to repeat the disclaimer about causality. I have been talking as if a correlation shown in a table were evidence that a difference in a predictor variable caused a difference in a criterion variable. This is never true, of course. I have taken the liberty of speaking as if it were true, however, whenever it seemed to me that the interpretation of a causal effect was a reasonable one. It would be well both for practice and research, of course, if the correlations displayed in this report were treated as *hypotheses* about causes and more direct tests undertaken in further researches. In the meantime, I have tried to look for competing hypotheses and mention them to the reader. But the reader should, of course, keep his eye out for the alternative hypotheses I have missed.

CHAPTER VIII

EFFECTS ON STUDENTS:
THEIR PERCEPTIONS OF WHO INFLUENCED THEM

In the previous chapter, I argued that in schools carrying on guidance activities students ought at least to have been aware that something of the sort was taking place. Though this might not be true of all aspects of guidance activity, certain features of guidance such as the testing program require highly visible processes. Telling students or parents about the results of standardized testing is not a subtle or hidden process; it is done through conscious actions taken openly. The argument was simple: that relatively more students would be aware of such activities where counselors were more available. We found some evidence that this was the case, though talking with faculty about test results seemed to heighten awareness of the testing program more than did the presence of relatively more counselors.

This chapter will describe a somewhat similar inquiry. Unlike the previous chapter, however, this chapter will not look at the knowledge of students about particular features of the guidance program such as the manner of disseminating test results; we shall not be looking at the knowledge or choices of students in comparison to their opportunities to be influenced by counselors or faculty. The strategy here is much simpler. One way to find out whether one person influenced another is simply to ask the second person whether he was influenced by the first; questions having this purpose were included in the student's questionnaire. This chapter will recount the findings on these items.

I do not urge that the students' reports of influences upon them be taken as accurate statements of fact. Rather, I think the data in this chapter can be most useful if they are considered to be another way of assessing the students' awareness of the availability of guidance services. That is, a student who says that he often talks over his plans and problems with a counselor (or with a teacher) is more aware that such services are available in the school than a student who does not say this. The student who says that he got information about occupations from a counselor may have obtained a small bit or a large fund of information; the fact that he mentions the counselor, however, indicates that the information was sufficiently satisfying so that the counselor remains salient in his mind as a potential source of information. The student who says he "usually" goes to the counselor to talk over plans and problems may actually have visited the counselor once or twice; the point is that he thinks of the counselor as a likely source of help -- as a person to whom he would "usually" go should the need arise. Accordingly, looking at the students' reports as evidence of awareness of the potentiality of certain sources of information, we shall again as in previous chapters plot the students' responses as criterion variables against the predictor variables of counselor-student ratio and visiting the counselor.

Sources of Information about Occupations

After asking the student his occupational choice and some further questions about the nature of the occupation and how one enters it, our questionnaire asked the student (Item 16, Appendix II-B) how or from whom he found out the information he had given in answer to the earlier questions. Students gave a variety of answers concerning the sources of their information, mentioning family or friends most often but also mentioning teachers, counselors, clubs, and magazines or books. The original classifications into which the answers were coded are shown in Appendix VIII-B.

Students often named more than one source in answering the question about the source of their occupational information. Since we were most interested in whether the students were in touch with the guidance services of the school, the responses of the students were recoded to bring out the possibility of the school as a source of influence. Since counselors were mentioned very rarely, the first type of answer singled out was the type in which a teacher, counselor, or other faculty member was mentioned as a source of information. The second type of answer was that in which no faculty member was mentioned anywhere in the student's answer but in which mention was made of books, magazines, and so forth. The third type of answer mentioned neither a source of information among the faculty nor in the mass media but mentioned family or friends. Finally, the fourth category contained answers of students who mentioned no other persons nor mass media but merely claimed to have obtained the information from within themselves or from their own efforts. These four types of responses are listed in Table VIII-1 which also shows the frequencies of these types of answers in schools of different counselor-student ratios.

It is obvious in Table VIII-1 that there was no significant relation between counselor-student ratio of the school and the type of answer given by the student concerning the source of his information about occupations. A number of other analyses were tried (see Appendix VIII-A), but no significant relation could be found comparing counselor-student ratio with type of answer given and none could be found comparing visiting the counselor with type of answer given. In brief, the availability of

Table VIII-1. Sources of Information: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Gave Indicated Answers to the Question, "How, or From Whom, Did You Find Out the Information You Have Given in Answer to Questions (about the chosen occupation)?"

A: Mentioned some person in school (teacher, counselor, etc.) as source of information.

B: Did not mention a person in school but mentioned mass media (books, magazines, etc.).

C: Mentioned neither a person in school nor mass media; mentioned family or friends.

D: Mentioned no persons nor mass media; answered "self," etc.

Counselor-student ratio	Type of answer D	C	B	A	Total	N
.00323 - .00794	15	31	24	30	100	375
.00168 - .00322	16	25	26	33	100	330
Zero - .00167	16	29	25	30	100	358
	16	28	25	31	100	1063

counselors seemed to have no effect upon the perceptions students had of the source of their information about their chosen occupations.

Let me repeat that I am not suggesting that the reports of the students should be taken as accurate descriptions of the effectiveness of guidance in their schools. We saw some evidence in Chapter IV that visiting the counselor did seem to have something to do with the exactness of the student's knowledge about one aspect at least of his chosen occupation -- the amount of education it required. Still, this study can give no direct evidence about what causes what. If students are more knowledgeable about occupations where counselors are more available and teachers are more active in guidance, it might be that these students are in schools which make books and magazines more easily available; and it might be that these same schools are in communities where families and friends are more interested in discussing the students' future occupations with them. Thus, although all _types_ of sources of occupational information might remain about equally accessible in schools of all counselor-student ratios (as shown in Table VIII-1), any or all of these sources might be more _effective_ in the schools of higher ratios than in the schools of lower (as in Table IV-7). In other words, Tables IV-7 and VIII-1 need not be contradictory.

The answers to the item about the source of occupational information were not random. Answers given by students in college-preparatory curricula were very significantly different from answers given by students in other curricula.* Table VIII-2 tabulates the percentages of answers given by these two groups of students, using the original coding scheme

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* In this chapter, students are classified by curriculum according to their own reports.

Table VIII-2. Sources of Information: Percentages of Students in College Preparatory and Other Curricula Who Named Various Persons or Other Sources of Information in Answer to the Question, "How, or From Whom, Did You Find Out the Information You Have Given (concerning your first occupational choice)?" Shown Separately for Males and Females.

	Source of information about occupation							
Curriculum	Self	Other*	Mass media	Un-specified teach.	Speci-fied teach.	Coun-selor or admin.	Total	N
				Males				
Coll. prep.	19	34	27	4	7	9	100	258
Other	28	36	15	5	13	3	100	201
	23	35	22	4	10	6	100	459
5 df, chi-square = 21.42, P < .001								
				Females				
Coll. prep.	18	35	26	9	5	7	100	246
Other	20	30	24	6	14	6	100	336
	19	33	25	7	10	6	100	582
5 df, chi-square = 18.56, P < .01								
10 df, total chi-square = 39.98, P < .001								

* Family, other adults, friends, and school clubs.

described in Appendix VIII-B. We see in Table VIII-2 that among males the college-preparatory students more often named counselors and the mass media as the sources of their occupational information while, relatively, students in other curricula more often named particular teachers or attributed their knowledge of their occupations to their own efforts. Among females the chief difference lay in the frequency with which the girls specified the teachers who influenced them; girls in college-preparatory curricula tended more often to name teachers without particularizing them than did girls in other curricula while the latter more frequently specified which teachers had been influential.*

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* In the tables in this chapter, a percentage is underlined to draw attention to its disproportionality only if the chi-square value for the cell is larger than unity.

Unlike the differences between curricula, the differences between males and females were not remarkable; this is apparent from the totals in Table VIII-2. Although an analysis of the differences between males and females controlled on curriculum gave a result which just reached the .05 level of significance, the relation between sex and source of information was not significant among college-preparatory students (chi-square = 7.07, 4 df requires 9.49) nor was it significant among students in other curricula (chi-square = 8.50, 4 df).

The hypothesis of near and far goals discussed in Chapter IV suggests that the pattern of results shown in Table VIII-2 might be due largely to the context within which the criterion question was asked. It is possible that the teachers identified as sources of information by students not in the college-preparatory curricula were more often than not teachers of "occupational" subjects. If students had talked about their occupational choices with teachers of typing, bookkeeping, auto mechanics, and so forth, it would have been easy for the student to identify the teacher by his subject matter when he was answering our question. Teachers of college-preparatory subjects, however, are not typically identified as teachers of engineering, medicine, or other professions, nor are they conceived as teachers of "college"; the student would not typically think to himself, "I talked about this with a teacher of a college-preparatory subject." Perhaps we would have got a more complete picture of the perceptions students had about their sources of information had we also asked a question such as "With whom have you discussed the possibility of going or not going to college?".

Salient Confidants

A more general question which was asked the student was "When you want to talk over your plans and problems with someone, to whom do you usually go?". As with the question of the previous section, the codes originally used with this question (see Appendix VIII-B) were further condensed for the purposes of this chapter. In Tables VIII-3 through 5, the category "other faculty" includes teachers and administrators and "family, friend, no one" includes in addition a scattering of adults who were neither school faculty nor members of the family. Answers were categorized under "counselor" if a counselor or dean was mentioned, under "other faculty" if a faculty member was mentioned but no counselor or dean, and under "family, friend, no one" if no faculty member at all was mentioned.

Tables VIII-3 through 5 do not reveal much to us about the student's picture of his sources of information even though the patterns in the tables show high statistical significance. The tables relate two

Table VIII-3. Sources of Counsel: Percentages of Students Who Had and Had Not Visited a Counselor Who Gave Indicated Types of Answer to the Question, "When You Want to Talk Over Your Plans and Problems with Someone, to Whom Do You Usually Go?" Shown Separately for Students in College Preparatory and in Other Curricula.

Visited counselor	Answer to title question			Total	N	Chi-square	
	Family, friend, no one	Other faculty	Counselor				
		College-preparatory curricula					
Yes	78	6	16	100	327		
No	90	6	4	100	183		
	82	6	12	100	510	16.52	P < .001
		Other curricula					
Yes	77	8	15	100	315		
No	91	5	4	100	271		
	83	7	10	100	586	22.93	P < .001
			4 df, total chi-square			39.46	P < .001

Table VIII-4. Sources of Counsel: Percentages of Students Who Had and Had Not Visited a Counselor Who Gave Indicated Types of Answer to the Question, "When You Want to Talk Over Your Plans and Problems with Someone, to Whom Do You Usually Go?" Shown Separately for Males and Females.

Visited counselor	Answer to title question: Family, friend, no one	Other faculty	Counselor	Total	N	Chi-square	
			Males				
Yes	75	8	17	100	277		
No	86	8	6	100	210		
	80	8	12	100	487	13.50	P < .01
			Females				
Yes	78	7	15	100	349		
No	93	3	4	100	244		
	84	5	11	100	593	24.82	P < .001
			4 df, total chi-square			38.32	P < .001

Table VIII-5. Sources of Counsel: Percentages of Students Who Had and Had Not Visited a Counselor Who Gave Indicated Types of Answer to the Question, "When You Want to Talk Over Your Plans and Problems with Someone, to Whom Do You Usually Go?" Shown Separately by Mean Number of Hours per Semester Spent by Teachers in Gathering Information About Students.

	Answer to title question						
Visited counselor	Family, friend, no one	Other faculty	Counselor	Total	N	Chi-square	
			13.50 to 28.49 hours per semester				
Yes	79	5	16	100	297		
No	89	6	5	100	167		
	83	5	12	100	464	10.87	P < .01
			3.00 to 13.49 hours per semester				
Yes	74	10	16	100	329		
No	91	5	4	100	287		
	82	7	11	100	616	31.35	P < .001
			4 df, total chi-square			42.22	P < .001

questions: "Have you ever visited a counselor?" and "... to whom do you usually go?" The tables show (regardless of sub-classification) that a greater percentage of students who said they had visited a counselor also said they usually went to counselors to talk over their plans and problems than did students who had never visited a counselor. Although these two questions are not identical (particularly in schools where every student is required to visit a counselor), nevertheless one would be very surprised if answers to the two questions did not show a strong association. The two questions are not experimentally independent. For example, some students who reported not having visited a counselor were indeed in schools where there were no counselors, knew that there were none, and would hardly have said they "usually" went to a counselor to talk about their plans and problems.

The chief point of interest in these tables is that no differences worth mentioning appeared in the column for "other faculty." If visiting a counselor tended to lead some students to say they "usually" went to counselors to talk, it did not seem to lead any to seek out teachers for this purpose. Perhaps this is not surprising either. In any case, the total percentage of students naming teachers or administrators was small, and it may be that the tables are not worth much speculation. The one conclusion which can confidently be drawn from the tables is that the students, on the whole, were answering the questionnaires carefully.

Counselor-student ratio showed no significant relation with answers to the criterion question. In brief, analysis of answers to this question about confidants showed us no differences in practices related to counselor availability in the schools.

Confidants In School or Out

It will have been noticed in Table VIII-3 through 5 that 80 to 84 percent of the students mentioned confidants outside the school when the general question about confidants was asked without any restriction. Another question in the questionnaire read "Is there anyone in school with whom you talk over your plans and problems?" In our search for effects of counselor availability, we pooled answers to this question and the previous one in order to increase the percentages of students who could be categorized as having mentioned counselors or other faculty as confidants. In the remainder of the tables in this chapter, a student is tallied under the heading "counselor" if he mentioned a counselor or dean in response to either question. Correspondingly, he is tallied under "other faculty" if he did not mention a counselor or dean in either question but did mention some faculty member; and he is tallied under "family, friend, no one" if he mentioned no faculty member in answer to either question. In brief, the student is counted as having mentioned a counselor if he did so either straight off or with a little prodding, similarly for "other faculty"; and he answered "family, friend, no one" if neither the first question nor the prodding brought out any member of the faculty as a confidant.

The result of pooling the answers to these two items can be seen by comparing the totals of Table VIII-6 with the totals in Tables VIII-3 through 5; many students mentioned teachers or counselors as confidants after being prodded by the second question who had not mentioned them spontaneously in answer to the first question. Twenty-three percent mentioned a counselor in answer either to the first question or the second, and 25 percent mentioned other faculty. Both these figures are considerably higher than the corresponding figures in Tables VIII-3 through 5.

Table VIII-6. Sources of Counsel: Percentages of Students Who Had and Had Not Visited a Counselor Who Gave Indicated Types of Answer to Either Question, "When You Want to Talk Over Your Plans and Problems with Someone, to Whom Do You Usually Go?" or "Is There Anyone in School with Whom You Talk Over Your Plans and Problems?"

	Answer to title questions				
Visited counselor	Family, friend, no one	Other faculty	Counselor	Total	N
Yes	37	30	33	100	618
No	73	18	9	100	445
	52	25	23	100	1063

2 df, chi-square = 144.82, P < .001

In contrast to the earlier tables, Table VIII-6 shows a higher proportion of students mentioning "other faculty" among those students who had visited a counselor than among those who had not. However, for reasons given earlier, we shall not pursue any further the possible relations we might discover between visiting the counselor and choosing a counselor or teacher as a confidant. The choice of confidant as assessed by the two questions taken together showed interesting relations with academic aptitude and with counselor-student ratio, and we shall turn now to the analyses using these latter variables.

Table VIII-7 shows that there was a tendency for academic aptitude to be associated with the type of confidant chosen. The chief difference appeared among males and in the contrast between choosing other faculty or choosing family, friend, or no one. Thirty-six percent of boys of high academic aptitude chose teachers (or administrators, occasionally) as confidants while only 18 percent of boys of low academic aptitude did so. Sixty-three percent of boys of low academic aptitude chose no one in the school as a confidant while only 36 percent of boys of high academic aptitude avoided the school faculty. These are strong differences. On the other hand, the differences among females did not reach the .05 level of significance; and academic aptitude showed no effects on the choice of a counselor as confidant which were worth remarking, even among males.

Table VIII-8 divides the students according to counselor-student ratio in the school, and here again the relation between academic aptitude and the confidant criterion maintained a significant trend. Most of the strength of the trend appeared among students in schools of the lowest counselor-student ratios; and, as we might have expected in schools having few counselors, the differences lay between choosing teachers as confidants and choosing no faculty at all as confidants.

Table VIII-7. Sources of Counsel: Percentages of Students of Indicated Levels of Academic Aptitude Who Gave Indicated Types of Answer to Either Question, "When You Want to Talk Over Your Plans and Problems with Someone, to Whom Do You Usually Go?" or "Is There Anyone in School with Whom You Talk Over Your Plans and Problems?" Shown Separately for Males and Females.

	Answer to title question						
Academic aptitude	Family, friend, no one	Other faculty	Coun-selor	Total	N	Chi-square	
			Males				
High	36	36	28	100	160		
Middle	51	24	25	100	170		
Low	63	18	19	100	152		
	50	26	24	100	482	23.63	P < .001
			Females				
High	51	31	18	100	191		
Middle	55	20	25	100	189		
Low	57	21	22	100	209		
	54	24	22	100	589	9.29	P < .10
			8 df, total chi-square			32.92	P < .001

Table VIII-8. Sources of Counsel: Percentages of Students in Indicated Levels of Academic Aptitude Who Gave Indicated Types of Answer to Either Question, "When You Want to Talk Over Your Plans and Problems with Someone, to Whom Do You Usually Go?" or "Is There Anyone in School with Whom You Talk Over Your Plans and Problems?" Shown Separately by Counselor-Student Ratio of School.

	Answer to title question						
Academic aptitude	Family, friend, no one	Other faculty	Coun-selor	Total	N	Chi-square	
	Counselor-student ratio .00323 - .00794						
High	43	29	28	100	155		
Middle	51	20	29	100	131		
Low	57	15	28	100	92		
	49	22	29	100	378	7.80	NS
	Counselor-student ratio .00168 - .00322						
High	51	28	21	100	98		
Middle	55	21	24	100	110		
Low	58	15	27	100	120		
	55	21	24	100	328	5.63	NS
	Counselor-student ratio zero - .00167						
High	39	46	15	100	98		
Middle	53	25	22	100	118		
Low	62	26	12	100	149		
	53	31	**16**	100	365	20.36	P < .001
			12 df, total chi-square			33.79	P < .001

Looking at Table VIII-8, one can speculate -- as I have often done in previous chapters -- that the presence of relatively numerous counselors tends to "stir things up." Perhaps the presence of more numerous counselors makes a greater portion of the student body aware of the guidance services, including the availability of counselors as confidants. Looking at the subtotals in Table VIII-8, we can note that only 16 percent of the students in schools of the lowest counselor-student ratio chose counselors as confidants while 24 percent in the middle ratios did so and 29 percent in schools of the highest ratios. (We shall see in Table VIII-9 that these differences were significant.) Although these differences might be expected on the basis of the availability of counselors to become confidants, we should also note that nowhere, even where relatively more counselors were available, did students of high academic aptitude take advantage of this fact any more often than did students of low academic aptitude. Neither did students of high academic aptitude choose teachers as confidants any more often than did students of lower aptitude in the schools with the middle and high counselor-student ratios. These results argue not only that relatively more students in the schools of the higher counselor-student ratios were attracted to counselors as confidants, but also that both teachers and counselors were more uniformly attractive to students of varying academic aptitude in the schools of the higher counselor-student ratios. Some process associated with having counselors in the school, presumably, tended to spread the attractiveness of teachers and counselors as confidants more widely among the student body in the schools of the higher counselor-student ratios. In brief, Table VIII-8 suggests that higher counselor-student ratios tended to extend the benefits of faculty

Table VIII-9. Sources of Counsel: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Gave Indicated Types of Answer to Either Question, "When You Want to Talk Over Your Plans and Problems with Someone, to Whom Do You Usually Go?" or "Is There Anyone in School with Whom You Talk Over Your Plans and Problems?" Shown Separately for Males and Females.

	Answer to title question						
Counselor-student ratio	Family, friend, no one	Other faculty	Counselor	Total	N	Chi-square	
			Males				
.00323 - .00794	44	24	32	100	176		
.00168 - .00322	53	26	21	100	137		
Zero - .00167	54	28	18	100	169		
	50	26	24	100	482	11.70	P < .02
			Females				
.00323 - .00794	54	21	25	100	202		
.00168 - .00322	57	17	26	100	191		
Zero - .00167	52	33	15	100	196		
	54	24	22	100	589	20.50	P < .001
			8 df, total chi-square			32.20	P < .001

advice to students in the middle and low ranges of academic aptitude. This conclusion has the same ring as conclusions we have reached in regard to other criteria in earlier chapters.

Still another tendency can be discerned in Table VIII-8. Looking at the subtotals in Table VIII-8 and beginning at the bottom, we note that in schools of the lowest counselor-student ratios 31 percent of students chose teachers as confidants while only 16 percent chose counselors. In schools of higher counselor-student ratios the percentages choosing counselors were greater (24 and 29 percent), but not to any significant degree at the expense of the percentages choosing family, friends, or no one (in the latter category of answer the percentages stayed close together: 53, 55, 49). Instead, the percentages of students choosing teachers are seen to have been smaller in the middle and high ranges of counselor-student ratios (21 and 22 percent, respectively) than they were in the lowest ranges (31 percent). This tendency will be seen in subsequent tables to have been a statistically significant one -- the tendency, that is, in the schools of higher counselor-student ratios as compared with those of lower, for the percentage of students choosing counselors as confidants to have been higher while the percentage choosing teachers was lower and the percentage choosing family, friends, or no one stayed about the same.

Table VIII-9 shows clearly that both males and females tended to choose counselors as confidants more frequently where counselors were in more plentiful supply and to choose teachers (particularly was this true among females) where counselors were scarce. Among males, 32 percent of students in schools of the highest counselor-student ratios named counselors as confidants while only 18 percent of students in schools of the lowest ratios did so. On the other hand, 24 percent of males in high-ratio schools chose teachers but a few more, 28 percent, chose teachers in low-ratio schools. Among females, 25 and 26 percent chose counselors in schools of high and middle ratios while only 15 percent did so in low-ratio schools. On the other hand, only 21 percent of females chose teachers in the high-ratio schools but 33 percent chose teachers in low-ratio schools.

A similar trend was maintained when the data were controlled for academic aptitude, as can be seen in Table VIII-10. Here the pattern persists of choosing counselors as confidants more frequently where they were more available, although the relation did not reach statistical significance among students of middle academic aptitude. The pattern in the table is fairly regular otherwise, and the nonsignificance in the middle portion of the table might have been a chance result; we should not take time to speculate about it.

The results of Tables VIII-9 and 10 argue strongly that students more frequently saw counselors as actual or potential confidants where counselors were in more plentiful supply. The question remains, of course, whether students who chose counselors as confidants came away with any greater benefits than those benefits with which students who did not choose counselors came away from their own confidants. Chapters IV and V showed that evidence of this latter sort was not easy to obtain although it was not completely absent.

To bring the curriculum of the student into the picture, one further analysis was undertaken. Students were categorized both according to academic aptitude and according to curriculum with each of these variables dichotomized so that four cross-categories were formed. Within

Table VIII-10. Sources of Counsel: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Gave Indicated Types of Answer to Either Question, "When You Want to Talk Over Your Plans and Problems with Someone, to Whom Do You Usually Go?" or "Is There Anyone in School with Whom You Talk Over Your Plans and Problems?" Shown Separately for Three Levels of Academic Aptitude.

Counselor-student ratio	Answer to title questions: Family, friend, no one	Other faculty	Counselor	Total	N	Chi-square	
			High DAT				
.00323 - .00794	43	29	28	100	154		
.00168 - .00322	51	28	21	100	97		
Zero - .00167	39	45	16	100	96		
	44	33	23	100	347	11.92	P < .02
			Middle DAT				
.00323 - .00794	51	20	29	100	131		
.00168 - .00322	55	21	24	100	110		
Zero - .00167	53	25	22	100	117		
	53	22	25	100	358	2.44	NS
			Low DAT				
.00323 - .00794	56	15	29	100	90		
.00168 - .00322	59	15	26	100	119		
Zero - .00167	62	26	12	100	149		
	59	20	21	100	358	14.51	P < .01
			12 df, total chi-square			28.87	P < .01

these four categories, the relation was then examined between the counselor-student ratio of the school and the type of confidant chosen by the student. The interesting results are shown in Table VIII-11.

The relation between counselor-student ratio and type of confidant chosen remained significant among (a) students of high academic aptitude in college-preparatory curricula and also among (b) students of middle and low academic aptitude in other curricula. It is noteworthy that students in these two categories would be considered by a great many guidance people to have chosen (or to have been placed in) appropriate curricula. That is, if students of high academic aptitude should be preparing to go on to college and if students of lower aptitude should be in other curricula, then the students in these two categories were appropriately placed, and these were the students among whom significant disproportionalities existed when counselor-student ratio was compared with type of confidant chosen. The students in the remaining two categories (whose choices are displayed in the two middle sections of Table VIII-11) could be said to have been enrolled in inappropriate curricula; they did not exhibit any significant differences in their choices of confidants in comparison to the counselor-student ratios of their schools.

Among students in appropriate curricula, the differences in choice of counselor as confidant are striking. In the top section of the table, we see that 31 percent of students in schools of high counselor-student ratio chose counselors as confidants while only 13 percent of students in schools of the lowest ratios did so. In the bottom portion of the table, the corresponding percentages are 26 and 15.

In sum, students in appropriate curricula (according to DAT score) tended to select counselors as confidants where counselors were

Table VIII-11. Sources of Counsel: Percentages of Students in Schools of Indicated Counselor-Student Ratios Who Gave Indicated Types of Answer to Either Question, "When You Want to Talk Over Your Plans and Problems with Someone, to Whom Do You Usually Go?" or "Is There Anyone in School with Whom You Talk Over Your Plans and Problems?" Shown Separately for Two Levels of Academic Aptitude Crossed with College-Preparatory Students and Others.

	Answer to title question						
Counselor-student ratio	Family, friend, no one	Other faculty	Coun-selor	Total	N	Chi-square	
	High DAT and college-preparatory curriculum						
.00323 - .00794	42	27	31	100	128		
.00168 - .00322	48	34	18	100	68		
Zero - .00167	40	47	13	100	70		
	43	34	23	100	266	12.78	P < .02
	Middle and low DAT and college-preparatory curriculum						
.00323 - .00794	50	20	30	100	90		
.00168 - .00322	47	24	29	100	70		
Zero - .00167	43	29	28	100	79		
	47	24	29	100	239	2.11	NS
	8 df, total chi-square for college preparatory					14.89	P < .08
	High DAT and other curricula						
.00323 - .00794	48	32	20	100	25		
.00168 - .00322	57	14	29	100	28		
Zero - .00167	39	38	23	100	26		
	48	28	24	100	79	5.12	NS
	Middle and low DAT and other curricula						
.00323 - .00794	57	17	26	100	126		
.00168 - .00322	63	14	23	100	155		
Zero - .00167	63	22	15	100	247		
	61	19	20	100	528	10.66	P < .05
	8 df, total chi-square for other curricula					15.78	P < .05
	16 df, total chi-square					30.67	P < .02

available and to select teachers where counselors were not available while students in inappropriate curricula chose as confidants counselors, other faculty, or persons outside the school without regard to the availability of guidance services.

The result of Table VIII-11 is reminiscent of the result of Table V-4, where we saw that the proportion of high-aptitude students in college-preparatory curricula was greater in schools of high counselor-student ratios than in schools of low, at least in the case of females. In pursuing the analysis described in Chapter V, however, we did not find that visiting the counselor was related to the appropriateness of the curriculum. The significant pattern in Table VIII-11 may argue that there were wide differences in effectiveness associated with the kind of bond which existed between counselor and student. The difference in the kind of bond may be reflected in the difference between the questions, "Have you ever visited a counselor?" and "... to whom do you usually go...to talk over your plans and problems?". We can conclude, it would seem, that students who were in appropriate curricula more often formed relatively close bonds than did students in inappropriate curricula -- bonds with counselors if counselors were plentiful or with teachers if counselors were scarce.

It is difficult to be sure which condition here was cause and which effect. Did the students who formed the bonds with counselors and teachers get guided into the appropriate curriculum; or was it that the students who had selected the socially approved path to an occupation found a more ready acceptance and favorable affective response from counselor and teacher; or were both directions of effect at work? This is another question which this research cannot answer.

Summary

Some evidence was presented in this chapter which argued strongly that the counselor-student ratio of the school was associated with the kind of confidant chosen by the student with whom to "talk over his plans and problems." Two questions from the student's questionnaire were used in combination: "When you want to talk over your plans and problems with someone, to whom do you usually go?" and "Is there anyone in school with whom you talk over your plans and problems?". Students were categorized according to (a) whether they mentioned a counselor as confidant in answer to either of these questions, (b) whether, if not a counselor, they mentioned some other faculty member, and (c) whether they mentioned no faculty member at all. Students in schools of the higher counselor-student ratios were found to name counselors as confidants more often than students in schools of lower ratios even when the analysis was controlled for academic aptitude (Table VIII-10). It was also discovered that this association was stronger among students whose curriculum was appropriate (in one sense) to their academic aptitude levels while a significant relation did not exist among students whose curriculum was not appropriate. For purposes of the analysis, the college-preparatory curriculum was taken to be "appropriate" for students in the upper third of the academic-aptitude distribution and other curricula were taken to be "appropriate" for students in the middle and lower thirds of the academic-aptitude distribution.

These results argue that more students at least felt attracted toward counselors as confidants and possibly did more often confide in them where counselors were, in fact, relatively more available. There was also a strong tendency among students in "appropriate" curricula for students not only to make use of counselors as confidants where counselors were plentiful but also of teachers where counselors were scarce; this tendency did not appear among students in "inappropriate" curricula.

CHAPTER IX

EFFECTS ON STUDENTS:

WHAT THEY BELIEVED FACULTY KNEW ABOUT THEM

In Chapters IV and V we examined knowledge and choices on the part of students -- knowledge and choices which could reflect some goals widely held by people concerned with guidance. We did not in those chapters pay any attention to the perceptions the students might have had of the guidance activity itself within their schools but only to knowledge and choices on the part of students which might affect their future careers. In Chapter VII we began looking at perceptions students had of matters concerned with guidance activity in their schools. Whether students noticed overt activity connected with the testing program was the topic of Chapter VII and students' identifications of influential confidants was the subject of Chapter VIII.

Since guidance involves getting information about students, we felt that students' perceptions of the information the faculty had obtained about them might reflect to some degree the efforts of the faculty to do so. This chapter will be devoted to the beliefs of students concerning the kinds of information their teachers had about them.

Efforts to Know Students

One item of the questionnaire (Item 5, Appendix II-A) was designed to give an indication of whether students were generally satisfied with the extent to which they were known by teachers:

> "Do you think that your teachers spend as much time as they ought to spend in getting to know their students?"

This item offered the respondent only two answers: yes and no. About three-quarters of the students chose to say no, that their teachers did not spend enough time getting to know them. This proportion of dissatisfaction, however, was somewhat less for students high in academic aptitude (2 df, $P < .05$) and for students who reported more frequent talking with teachers about test results (3 df, $P < .02$). The proportions were not affected by counselor-student ratio of the school, by the size of the school, by visiting the counselor, nor by information-seeking on the part of teachers. From this general question, let us turn now to specific kinds of information which teachers could have about students.

Kinds of Information about Students

Item 3 of the student's questionnaire presented a tabular form to the students very much like the form of Table IX-1. The students were told, "Below is a list of things your teachers could know about you as a person," and were instructed, first, to place an X in the appropriate column "after each thing that practically all of your teachers know about you." They were next instructed to place an X in the next column "after each thing that only a few of your teachers know about you" and then to place an X in a third column "after each thing that none of your teachers know about you."

Unfortunately, this item slipped through the design and pretesting stages with the large psychological gap (which now seems only too obvious) between the alternatives "only a few" and "practically all." The result was that the meaning of some of the responses could not be

Table IX-1. What Teachers Knew: Percentages of Students Indicating that None, a Few, or All of Their Teachers Had Indicated Kind of Knowledge About Them.

Kind of knowledge teacher could have about student	None of my teachers know this	Only a few of my teachers know this	All of my teachers know this	Total	N
Performance in school subjects	1	13	86	100	1032
Intelligence and academic ability	3	22	75	100	1011
Personality and character	3	23	74	100	1015
Interests	15	71	14	100	973
Aspirations and ambitions	22	65	13	100	953
Esthetic and artistic abilities	42	50	8	100	914
Family and home life	50	47	3	100	1015
Fears and worries	81	17	2	100	988

ascertained and had to be dropped from the total. This explains the varying number under "N" in Table IX-1.* Though the data were somewhat damaged by this error in design, the results are reported because the proportion of responses rejected was small and because, as will be seen, the pattern of results was meaningful and useful. Furthermore, we can still ask whether the availability of counselors was associated with a shift of answers toward "practically all my teachers" regardless of the fact that the proportions of students picking "only a few" and "practically all" were surely distorted by the fact that an alternative between these two was not available to them.

In addition to the meaningful pattern to be displayed in the rest of the chapter, other evidences of reliability of the data were present. For example, students who had not been in the school the previous year said more frequently than did students who had been in school the previous year that none of their teachers had information about their family and home life.

The various kinds of information mentioned in the questionnaire are arranged in Table IX-1 in order of the percentage of students saying that "practically all" of their teachers had the named kind of information about them. It will be no surprise (but it is another indication of the validity of the data) that the kind of information at the top of the list is performance in school subjects, nor is it surprising that the next in the list is intelligence and academic ability. In regard to personality and character, the third kind of information in the list, it seems reasonable to suppose that the words in this phrase brought to the minds of the students much more visible and superficial characteristics than they typically bring to psychologists and counselors.

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* I suppose that our intention was to reduce the work required of the respondent by asking him to indicate only extreme proportions of teachers having the various kinds of knowledge about him. The result was, however, that a blank line on the questionnaire after a particular kind of knowledge might have meant that the student believed that more than a few of his teachers had that kind of knowledge about him though not all of them; but, on the other hand, he might merely have skipped that line. To purge the data of this ambiguity, we omitted respondents in analyzing the results for a particular kind of information if they had not checked one of the three alternatives offered.

Following the first three types of information, the percentages of students reporting that "all of my teachers know this" dropped off precipitously; and the percentages saying that none of their teachers had each kind of information rose as swiftly. Fifteen percent of the students said that none of their teachers knew about their interests, and 81 percent said none of the teachers knew about their fears and worries. In general and roughly, the order of the kinds of information listed in Table IX-1 seems to run from kinds of information about which the teacher typically has visible evidence and which is directly connected with the chief business of the school to kinds much less easily visible and which are more likely to become of concern to the teacher when the behavior of the student fails to mesh with the daily routines.

We also asked the students (Item 3, Appendix II-A) what they felt teachers ought to know about them. The results showed a general trend for students to name those things they most often said teachers did not know about them as things teachers ought to know about them. Because of some defects in the data, these results will not be further detailed here but the general trend can perhaps be taken as suggestive.*

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* For a tabulation of the trend, see Table XXIII in Chapter II of Hastings, et al., 1960.

The percentages of students choosing the various alternatives expressing the proportions of teachers whom they felt had each kind of information about them were examined in relation to our customary predictor variables. Neither performance in school subjects nor personality and character displayed any significant relations with academic aptitude, counselor-student ratio, or visiting the counselor;* and we shall not pay these two types of information any further attention.

Students in the upper ranges of academic aptitude, compared to those in the lower ranges, tended to report that more of their teachers had information about their intelligence and academic ability. There was also a significant relation (but non-monotonic) between academic aptitude and responses in connection with aesthetic and artistic abilities. Neither of these types of information, however, showed a significant relation with counselor-student ratio nor with visiting the counselor when the analysis was controlled for academic aptitude, and these types of information also will be set aside from further attention.

Although none of the remaining types of information showed a significant relation with counselor-student ratio, all exhibited significant relations with visiting the counselor; and it is to these relations which we shall turn shortly. Before going into details, however, a few general comments are in order.

The four types of information to be discussed in detail are those listed fourth, fifth, sixth, and eighth in Table IX-1. That is, these are the kinds of information in respect to which students felt _not_ well known by teachers. As we shall see, visiting the counselor seemed to increase the proportion of the faculty which the student felt had each particular kind of information about him. (It seems unlikely that a student who felt that many of his teachers had a particular kind of information about him would thereby be prompted to visit a counselor; the better interpretation would seem to be the other way round, that visiting a counselor had an effect on the extent to which the student felt his characteristics were known by the faculty.) Finally, it should be pointed out that finding significant relations between visiting the counselor and four of the eight kinds of information studied is an outcome very unlikely to have happened merely through chance. This is particularly true when the levels of confidence (see Tables IX-2 through 5) are considered; two relations were significant at the .02 level and two at the .001 level.

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* It is true that the simple relation between visiting the counselor and responses in connection with personality and character was significant at the .05 level of confidence (2 df) but the relation became non-significant when controlled for academic aptitude.

Interests

In regard to the interests of the student, Table IX-2 shows an over-all trend for students who had visited a counselor to report that relatively more of his teachers knew about his interests while students who had not visited a counselor reported that relatively fewer or none of his teachers had this kind of information about him. The portions of teachers reported as having this kind of information did not differ significantly among students of differing levels of academic aptitude.

Aspirations and Ambitions

The tendency to believe that relatively more teachers possessed the particular kind of information on the part of students who had visited a counselor as compared to those who had not can be seen in Table IX-3.

Table IX-2. What Teachers Knew: Percentages of Students Who Had and Had Not Visited a Counselor Who Indicated that None, a Few, or All Their Teachers Had Knowledge of Their Interests; Shown Separately for Three Levels of Academic Aptitude.

Visited counselor	Portion of teachers with knowledge of student's interests						
	None	A few	All	Total	N	Chi-square	
			High DAT				
Yes	13	72	15	100	202		
No	20	71	9	100	121		
	15	72	13	100	323	4.65	P < .10
			Middle DAT				
Yes	8	77	15	100	201		
No	25	67	8	100	125		
	15	73	12	100	326	19.01	P < .001
			Low DAT				
Yes	12	70	18	100	162		
No	21	62	17	100	162		
	16	67	17	100	324	5.10	P < .10
			6 df, total chi-square			28.76	P < .001

Table IX-3. What Teachers Knew: Percentages of Students Who Had and Had Not Visited a Counselor Who Indicated that None, a Few, or All Their Teachers Had Knowledge of Their Aspirations and Ambitions; Shown Separately for Three Levels of Academic Aptitude Crossed with College Preparatory or Other Curricula.

	Portion of teachers with knowledge of student's aspirations and ambitions					
Visited counselor	None	A few or all	Total	N	Chi-square	
	High DAT and college preparatory					
Yes	19	81	100	156		
No	25	75	100	92		
	22	78	100	248	1.07	NS
	Middle and low DAT* and college preparatory					
Yes	16	84	100	144		
No	34	66	100	71		
	22	78	100	215	7.83	P < .01
2 df, total chi-square for college preparatory					8.90	P < .02
	High DAT and other curricula					
Yes	7	93	100	43		
No	39	61	100	28		
	20	80	100	71	9.22	P < .01
	Middle DAT and other curricula					
Yes	14	86	100	97		
No	27	73	100	71		
	20	80	100	168	3.20	P < .10
	Low DAT and other curricula					
Yes	19	81	100	112		
No	33	67	100	126		
	26	74	100	238	5.75	P < .02
3 df, total chi-square for other curricula					18.17	P < .001
5 df, total chi-square					27.07	P < .001

* Middle and low DAT combined because of paucity of cases under low DAT.

In constructing this table, students were separated into groups both according to academic aptitude and according to curriculum. It can be seen in the table that the general trend did not maintain significance within students of high academic ability who were enrolled in college-preparatory curricula. Parenthetically, the portions of teachers believed to have knowledge of aspirations and ambitions did not differ significantly with academic aptitude nor with curriculum.

Did counselors tend to take aspirations and ambitions for granted in the case of high-DAT students enrolled in college-preparatory curricula? Or did these students so generally feel that their aspirations and ambitions were widely known that visiting the counselor had little effect on changing their beliefs? The data are not decisive concerning either of these hypotheses. A third hypothesis, not unreasonable, is that the exception to the general trend seen in the case of the high-DAT-college-preparatory students was a chance result.

Family and Home Life

As with the table in the previous section, Table IX-4 is separated into crossed categories of academic aptitude and curriculum. Overall, the percentages of students believing that at least a few teachers had knowledge of their family and home life were greater among students who had visited a counselor than among students who had not. Although the relation within students of each curriculum group was not quite strong enough to reach the .05 level of significance, the relation over the entire table reached the .025 level.

Looking at the subsections of the table, we note that the subsections in which the relation reached the .05 level of significance were

Table IX-4. What Teachers Knew: Percentages of Students Who Had and Had Not Visited a Counselor Who Indicated that None, a Few, or All Their Teachers Had Knowledge of Their Family and Home Life; Shown Separately for Three Levels of Academic Aptitude Crossed with College Preparatory or Other Curricula.

	Portion of teachers with knowledge of student's family and home life					
Visited counselor	None	A few or all	Total	N	Chi-square	
High DAT and college preparatory						
Yes	48	52	100	165		
No	57	43	100	90		
	51	49	100	255	1.25	NS
Middle DAT and college preparatory						
Yes	43	57	100	101		
No	56	44	100	59		
	47	53	100	160	2.16	NS
Low DAT and college preparatory						
Yes	31	69	100	49		
No	59	41	100	22		
	39	61	100	71	4.02	$P < .05$
3 df, total chi-square for college preparatory					7.43	$P < .063$

(continued)

Table IX-4 continued.

	Portion of teachers with knowledge of student's family and home life					
Visited counselor	None	A few or all	Total	N	Chi-square	
		High DAT and other curricula				
Yes	36	64	100	45		
No	61	39	100	31		
	46	54	100	76	3.91	$P < .05$
		Middle DAT and other curricula				
Yes	46	54	100	104		
No	60	40	100	72		
	52	48	100	176	2.62	NS
		Low DAT and other curricula				
Yes	49	51	100	121		
No	55	45	100	143		
	52	48	100	264	0.66	NS
3 df, total chi-square for other curricula					7.19	$P < .10$
6 df, total chi-square					14.62	$P < .025$

those of (a) low-DAT students in college-preparatory curricula and (b) high-DAT students in other curricula. The weakest (or most random) relations occurred among (a) high-DAT students in college-preparatory curricula and (b) low-DAT students in other curricula. In other words, among students who were in "inappropriate" curricula, students who had visited a counselor reported much more frequently than those who had not that at least a few of their teachers had knowledge about their family and home life, while this trend was minimal (and not significant) among students in "appropriate" curricula. Here we are speaking of the "appropriateness" of curricula in the same way we did in the last chapter; that is, we are supposing high academic aptitude to be appropriate for college-preparatory curricula and middle or low academic aptitude to be appropriate for other curricula. (Appropriateness of the curriculum by itself, by the way, was not significantly related to the portion of the faculty the student felt had knowledge about his family and home life.)

The pattern of Table IX-4 is in a way the converse of the pattern we saw in Table VIII-11 in the last chapter. In connection with Table VIII-11, we noted significant disproportionalities among students in appropriate curricula; that is, students in appropriate curricula significantly preferred counselors as confidants rather than teachers if counselors were available. In Table IX-4 we have seen that the strongest part of the relation was concentrated among students in inappropriate curricula; that is, significantly more of these students reported that at least a few of their teachers knew about their family and home life if they had visited a counselor than if they had not. There would seem to be a connection between these two findings if the content of communication were different between faculty and students in appropriate curricula on the one hand and between faculty and students in inappropriate curricula on the other. Before explaining how this might be, let me describe a finding from the second project.

Did faculty to any important extent discuss the students' family and home life with them? There was some evidence* in the data from the Second Project that they may have done so. In that project faculty respondents were presented with descriptions of twelve problems which were typical of problems students discuss with faculty members -- either teachers or counselors. Faculty were asked what kinds of information they would wish to obtain to deal more effectively with each problem. Both teachers and counselors named information about family and home life as one of the first kinds of information they would wish to have in dealing with most of the problems. This was about as true of problems concerned with college-going as it was of other types of problems presented to the respondents.

Turning back to Table IX-4, we might entertain the hypothesis that, when counselors talked with students of low DAT in college-preparatory curricula or with students of high DAT in other curricula, the counselors more often than not considered the student to have a "problem" about college-going and would frequently discuss related family matters with him. On the other hand, our hypothesis would hold that counselors would less often perceive a "problem" to exist when talking with high-DAT students in college-preparatory curricula or with low-DAT students in other curricula and, consequently, would rarely bring family matters into the discussion -- devoting the conference, for example, to clarifying the individual preferences of the student. If this were the case, students in appropriate curricula who visited the counselor would not as a consequence of choosing a counselor as a confidant get any more frequently the impression that faculty were interested in his family and home life than would students in appropriate curricula who had not visited a counselor. On the other hand, the student in an inappropriate curriculum who had visited a counselor would often come to feel that faculty had knowledge about his family and home life because the counselor would have discussed these matters with him, while a student in an inappropriate curriculum who had not visited a counselor would less often have such a discussion in his memory.

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* See Tables III and IV in Appendix J of Hastings, Runkel, and Damrin, 1961.

In sum, Table IX-4 tells us of a third kind of information -- family and home life -- which more students tended to feel more teachers had about them if the students had visited a counselor than if the students had not. Beyond this, Table IX-4 combines with Table VIII-11 to suggest that the content of communication with the counselor was different for students in appropriate curricula on the one hand and for students in inappropriate curricula on the other. Here it seems very reasonable to suppose that the direction of effect went from the conversation with the counselor to the impression the student had of the extent of faculty knowledge about his family and home life. It would seem unreasonable to suppose that students believing at least some of the faculty to have this knowledge about them would thereby more often choose to visit a counselor than would students who believed that none of the faculty had this knowledge about them.

Fears and Worries

In respect to the portion of faculty the student believed to have knowledge of his fears and worries, there were no differences associated with the curriculum of the student. The relation with academic aptitude was negative; that is, students of low DAT more often felt that at least a few of their teachers knew about their fears and worries while students of middle or high DAT relatively more often felt that none of their teachers knew this (4 df, $P < .01$). There is no way to tell from our data whether this last finding means that faculty talked more with students of low academic aptitude than with students of high aptitude about their fears and worries or that the "level of adaptation" of high-DAT students was different from that of low -- that is, that high-DAT students were aware of a larger realm of fears and worries faculty could potentially know about than were students of low DAT.

In connection with the main topic of this chapter, Table IX-5 shows an overall trend in which students who had visited a counselor more often felt that at least a few of their teachers knew about their fears and worries and in which students who had not visited a counselor less often believed this. The effect was strongest among students of middle and low academic aptitude.

Summary

The results displayed in this chapter argue that students seemed to feel that there were large gaps in what teachers knew about them. We saw in Table IX-1 that 15 to 22 percent of students said that none of their teachers knew about their interests or their ambitions and aspirations, and 42 to 81 percent said none of their teachers knew about their aesthetic

Table IX-5. What Teachers Knew: Percentages of Students Who Had and Had Not Visited a Counselor Who Indicated that None, a Few, or All Their Teachers Had Knowledge of Their Fears and Worries; Shown Separately for Three Levels of Academic Aptitude.

	Portion of teachers with knowledge of student's fears and worries					
Visited counselor	None	A few or all	Total	N	Chi-square	
		High DAT				
Yes	81	19	100	207		
No	86	14	100	121		
	83	17	100	328	0.92	NS
		Middle DAT				
Yes	79	21	100	201		
No	90	10	100	129		
	83	17	100	330	6.36	P < .02
		Low DAT				
Yes	71	29	100	165		
No	81	19	100	165		
	76	24	100	330	3.71	P < .06
			3 df, total chi-square		10.99	P < .02

or artistic abilities, their family and home life, or their fears and worries. In answer to another question, 75 percent of students said that teachers did not spend enough time getting to know their students.

The chief question of the chapter was whether greater counselor availability resulted in more students being aware of the information-getting aspect of guidance. Eight kinds of information were named to students, and they were asked to indicate what portion of their teachers had each kind of information about them. Responses in connection with none of these kinds of information showed any significant relation to the counselor-student ratio of the school. However, responses in connection with four of these types showed significant relations to visiting the counselor (Tables IX-2 through 5). The relations were fairly strong. In respect to these four types of information (interests, aspirations and ambitions, family and home life, and fears and worries), students who had visited a counselor more often felt that at least a few of their teachers had the information about them than did students who had not.

In respect to information about family and home life, Table IX-4 showed that the relation with visiting the counselor was especially strong among low-DAT students in college-preparatory curricula and among high-DAT students in other curricula, while it was especially weak among high-DAT students in college-preparatory curricula and among low-DAT students in other curricula. I interpreted this result to suggest that counselors might have been discussing family matters with students whom they considered to be in inappropriate curricula but might not as often have been discussing these matters with the students they considered to be in appropriate curricula.

CHAPTER X

THE COLLEGE PREPARATORY STUDENT
AND THE OTHERS

(to be written)

CHAPTER XI

EFFECTS ON TEACHERS -- OR FROM THEM

What would we find to be different if we were to travel from a school of low counselor-student ratio to a school of high ratio? So far in this report, we have been on the lookout for differences in the choices, knowledge, and attitudes of students, comparing those who presumably had relatively easier access to counselors with those who had less easy access. But, still having in mind the guidance activities in these schools, what other differences might we find? We had already seen, for example, that teachers in schools of the higher counselor-student ratios tended to report spending more hours gathering information about students than did teachers in schools of lower ratios (Table III-18). We have also noted that the schools with relatively more counselors were typically the larger schools and conversely (Table III-6). What other differences might we find? Was the educational level of teachers different in the two kinds of schools? Were there differences in the amount of information about students easily available to teachers? Were teachers in the one kind of school in closer contact with parents than were teachers in the other kind? This chapter will turn to these and other questions and will present data taken from the questionnaires answered by teachers and principals.

The purpose of this chapter should be given a few more remarks since its purpose is different from that of earlier chapters. We tried in earlier chapters to discover the extent to which differences in the accessibility of counselors were sufficient explanation for differences in certain criterion responses of students -- responses having to do with certain commonly accepted goals of guidance. More precisely, we went to considerable trouble to ascertain whether the criterion responses by students could be predicted -- at least to a statistically significant extent -- from the counselor-student ratio of the school (or from whether the student had visited a counselor) after we had ruled out other reasonable hypotheses. We sought such relationships because our central concern in this book has been the efficacy of counseling efforts in present-day schools.

The concern in this chapter will be different. We shall turn from a direct concern with counselors and students to a concern with those others in the school who also are intimately involved in the guidance enterprise -- the teachers. We shall be looking for two kinds of information.

First, we shall be looking to see whether the attitudes and practices of teachers in schools of high counselor-student ratio provide a setting or atmosphere for carrying on guidance activity which is different from that found in schools of low counselor-student ratios. We have already seen evidence (particularly in Chapters IV, V, and VI) that relevant activity of teachers can give important help or hindrance to the work of counselors. We shall be looking in this chapter for further evidence of this kind of interaction.

Second, just as we were interested in the awareness of guidance activity on the part of students, so in this chapter we shall be on the lookout for the perceptions held by teachers of the conditions which exist in their schools for carrying on guidance activity. As one part of the picture teachers had of guidance in their schools, the data offer some evidence concerning the satisfaction teachers felt with certain aspects of guidance activity; these evidences of satisfaction, though somewhat fragmentary, will be compared between teachers in schools of higher counselor-student ratios and teachers in schools of lower.

A variable which will be prominent in this chapter will be enrollment or size of school. This variable was little mentioned in earlier chapters because it rarely affected the relation between the accessibility of the counselor and the criterion responses of students. In this chapter, however, we are interested in what goes along with having relatively more counselors in a school; and having more students generally goes along with having more counselors.

It seems easy for a person visiting a school to confuse size of guidance staff with counselor-student ratio.* Perhaps this confusion occurs among people working in a school also. If one is thinking about the guidance activity in a school, one might easily be impressed with the mere numerosity of a guidance staff. A staff of ten counselors impresses one with its size, it seems to me, whether the ten counselors are found in a school of 2,000 students (where they would provide one counselor for every 200 students) or in one of 5,000 (where they would provide only one counselor for every 500 students). A staff of five counselors might give one the impression of being "larger" than one of two even though the five counselors might be working with 2,000 students and the two counselors with 600. Perhaps a "large" staff of counselors might inspire a teacher to collaborative efforts through its mere conspicuousness -- as a kind of advertisement for guidance activity, so to speak -- whether the actual ratio of students to counselors worked out to 400, say, or 200.

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* -- and hence size of school, which was closely related to number of counselors (as we saw in Tables III-2 and 3 and in Figure III-1) also might be related to the visitor's impression of the relative profusion of counselors.

Furthermore, size of school and the counselor-student ratio are surely connected through other variables. For example, larger schools often have relatively more money available than smaller schools, enabling them to hire relatively more counselors, support more extensive testing programs, print more elaborate communications to parents, employ teachers more highly trained, and the like. For these reasons, size of school will figure as prominently as counselor-student ratio in the analyses to be presented in this chapter.

Preview

Before going into detail, I shall sketch briefly some of the characteristics of schools or faculties which this chapter will discuss. At the outset, we shall see that the schools with the higher counselor-student ratios -- or the larger schools, or both -- contained the teachers with relatively more formal education. Turning to other findings taken from the teachers' questionnaires, we shall see that schools of the higher counselor-student ratios or of the larger sizes (or both), compared to the schools of lower counselor-student ratios or smaller sizes (or both), seemed more frequently to have made recent innovations in their testing or guidance programs, contained more teachers who frequently sought information about students, reportedly had more kinds of information about students available in the school files, administered more kinds of standardized tests and more often conveyed the results to teachers and to parents in a regulated manner, and contained teachers who more frequently discussed test results with parents. To display these differences in a compact way, percentages of teachers giving these responses are shown in Table XI-1. The details of these comparisons will be displayed later in the chapter.

Other findings will concern preferences among methods of obtaining various kinds of information about students; this topic will invite some attention to the years of experience in teaching of the teacher. In schools of _low_ counselor-student ratios, the teachers who had been longer in teaching tended to have sharper preferences among methods of getting information than did teachers who had fewer years of experience. That is, for any particular kind of information the "older" teachers chose fewer methods as "best ways" to get the information than did the "younger" teachers. However, this difference between teachers of shorter and longer periods of service did _not_ occur among teachers in schools of _high_ counselor-student ratios. A particular finding which we shall describe in more detail later was that learning about students through standardized testing was, to a significant degree, less frequently favored by the "older" teachers than by "younger" teachers within schools of low counselor-student ratio, while testing remained equally favored by "older" and "younger" teachers in schools of high counselor-student ratio.

We shall see a few evidences that there tended to be more satisfaction in schools of high counselor-student ratio (or in larger schools) about certain matters connected with guidance than there was in schools of low ratios (or in smaller schools). The information in the school files concerning students was more frequently judged to be sufficient by principals and teachers in the former kinds of schools than in the latter.

Teachers in the large schools tended to feel that fewer kinds of information in addition to those already in the files were needed, and teachers in the schools of the higher counselor-student ratios tended to feel that fewer additional kinds of standardized tests need to be administered.

The suggestion is strong in our findings that schools of higher counselor-student ratios were in general better equipped with guidance information (or at least the teachers tended to think this was so) than were schools of lower counselor-student ratios, that the information about students was handled in more systematic and regulated ways, and that the teachers were more active in seeking information about students and in using test information in discussions with parents. Despite these differences, and even though some of the differences were very large between the schools of high and low counselor-student ratios (see Table XI-1), we should not forget the difficulty we had in finding differential effects on students in the two types of schools. Just as we argued in an earlier chapter that what we have been calling "high" counselor-student ratios do not seem to be high enough for the kind of effectiveness generally desired, so the suggestion is strong in this chapter that the "greater" amounts of collaborative activity on the part of teachers are none too great. Furthermore, if faculties tend to become relatively more satisfied with guidance activity in schools where counselors are relatively numerous in terms of present-day staffing levels (though our evidence for differences in satisfaction is scanty), this satisfaction would seem premature.

As a final note before proceeding, it may be well to review the method of selecting teachers. Within each school, names of teachers were selected randomly from the _Illinois School Directory_. Five names were taken

Table XI-1. Summary of Certain Subsequent Tables: Percentages of Teachers in Schools of High Counselor-Student Ratio (and/or of Large Size) and in Schools of Low Counselor Student Ratio (and/or of Small Size) Who Gave Indicated Types of Responses.

Type of response	Low couns.-stud. ratio (and/or small school size)	High couns.-stud. ratio (and/or large school size)	See table
Teachers with master's degree or more	22 %	72 %	XI-3
Teachers with two or more courses in technicalities of testing	28	49	XI-6
Teachers reporting recent innovations in testing or guidance	54	84	XI-7
Teachers reporting spending one hour per week or more seeking information about students	46	58	XI-10
Teachers reporting seven or more kinds of information about students available in school files	8	43	XI-13
Teachers reporting four or more kinds of test administered in school	43	87	XI-14
Principals reporting that almost all their teachers looked up test scores	15	41	XI-15
Teachers reporting that standardized test results were conveyed to them in a regulated manner	27	73	XI-16
Teachers reporting discussing test results with parents sometimes or frequently	44	59	XI-17
Teachers reporting that school gave test results to parents	35	48	XI-20
Teachers reporting that school gave test results to parents in a regulated manner	23	44	XI-19

NOTE: Some further differences are tabulated in Tables XI-25 and 35.

for each school enrolling fewer than 2,500 students; and 15 names were taken for larger schools. This procedure designated a total of 3,500 teachers or 20 percent of the approximately 17,675 teachers to be found in Illinois secondary schools of 100 or more enrollment at that time.

In the case of every individual person sampled, that person was named in the instructions accompanying each school's package of questionnaires. If a named teacher was no longer with the school, the school was instructed to replace him with the person whose name was next in alphabetical order. Our procedure actually got questionnaires into the hands of 3,286 teachers. Eighty-three percent of these returned their questionnaires. This rate of return and its associated sampling reliability was shown in Table II-2.

Counselor-Student Ratio, School Size, and Level of Education

The distribution of school sizes among schools in the three intervals of counselor-student ratio is shown in Table XI-2.* This table is actually a repetition of Table III-6(a) though with rows and columns interchanged. As was explained in Chapter III, the lack of cases in the cell marked with the asterisk is due to the artifact resulting from the units in which the data were collected. Having one counselor in a small school causes a large jump in the counselor-student ratio. To be specific,

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* It will be noted that the breaks between intervals of counselor-student ratio in Table XI-2 are the same as those used in the foregoing chapters dealing with responses of students. This is done so that comparisons can be more direct. However, there were a few schools in which we did not sample students which had much higher counselor-student ratios than any of the schools in which we did sample students. It is for this reason that the top interval in Table XI-2 is bounded at .05882 instead of at the figure of .00794 seen in earlier chapters.

Table XI-2. Percentages of Schools of Indicated Counselor-Student Ratios Falling in Indicated Enrollment Intervals.

Counselor-student ratio	Enrollment 17 to 199	200 to 599	600 to 5499	Total	N
.00323 - .05882	36	31	33	100	111
.00168 - .00322	0*	42	58	100	110
Zero - .00167	48	32	20	100	289
Grand totals	35	34	31	100	510
Totals omitting schools of middle coun.-stud. ratios	44	32	24	100	400

* The lack of cases here is due to the artifact resulting from the units in which the data were collected. Adding one counselor in a small school causes a large jump in the counselor-student ratio. Specifically, installing a first counselor in a school of 199 students would change the counselor-student ratio from zero to .00503; thus no schools of less than 200 enrollment could fall in the middle category of counselor-student ratio used in this study. Chi-square = 13.67, $P < .01$ with 3 df.

installing a first counselor in a school of 199 students would change the counselor-student ratio from zero to .00503; thus, no schools of less than 200 enrollment could fall in the middle category of counselor-student ratio used in this study. For this reason, two rows of percentages for "total" are given in Table XI-2. The bottom row for total in Table XI-2 shows the percentages of schools in the three size intervals, taking into account only those schools in the top and bottom intervals of counselor-student ratio and excluding those in the middle range. This is probably the better set of totals against which to compare the percentages in the cells in the top and bottom rows of the table in order to get a correct picture of the relation between counselor-student ratio and school size. That is, we can note that 33 percent of the schools in the highest interval of counselor-student ratio were schools larger than 600 enrollment while the base rate was only 24 percent; and 48 percent of the schools in the lowest interval of counselor-student ratio were schools smaller than 200 enrollment while the base rate for schools this small was only 44 percent. This is not a remarkably strong relation, but it is strong enough to be worth paying attention. We should also remember that a table with as few categories as Table XI-2 obscures the details of a relation. A better picture of the relation between counselor-student ratio and size of school can be obtained from Figures III-2 through 4. Those figures show that the relation, far from being linear, was not even monotonic.

In sum, one kind of difference among schools of different counselor-student ratios was the difference in size, though sizes did not differ uniformly in the different ranges of counselor-student ratio. If a criterion variable turns out to be monotonically related to counselor-student ratio, we should not therefore expect it necessarily to be related monotonically to enrollment, nor vice versa.

Schools of different counselor-student ratios differed in the mean level of formal education of the teachers. Of 2,470 teachers responding, 0.5 percent had doctor's degrees, 41.3 percent has master's degrees, 57.3 percent had bachelor's degrees, and 0.9 percent had no collegiate degree. We shall make use of the educational level of the teacher in the analyses of this chapter in much the same way that we made use of the academic aptitude of the student in earlier chapters. That is, we shall use level of education to reflect individual differences in readiness or facility in dealing with intellectual matters. Perhaps a measure of intelligence would have been as suitable for teachers as for students, but information on level of education was available for teachers while measures of intelligence were not.

Differences in mean level of education from one kind of school to another were remarkably great. In Table XI-3 we see that the percentage of teachers possessing the master's degree or more ranged over the various classifications of schools from 22 percent to 72 percent, with the lowest level of education occurring in the schools which were simultaneously smallest and had the lowest counselor-student ratios and the highest level occurring in the schools which were largest and had the highest counselor-student ratio. It is apparent in Table XI-3 that both enrollment and counselor-student ratio were related to level of education. The percentages under "master's or doctor's degree" descend steadily from top to bottom with only one break (not of great magnitude) in the progression.

Table XI-3. Percentages of Teachers in Crossed Categories of School Size and Counselor-Student Ratio Who Had Indicated Levels of Academic Degree.

Enrollment	Counselor-student ratio	Education: Bachelor's degree or none	Education: Master's or doctor's degree	Total	N
600 - 5499	.00323 - .05882	28	72	100	247
600 - 5499	.00168 - .00322	36	64	100	416
600 - 5499	Zero - .00167	50	50	100	296
200 - 599	.00323 - .05882	61	39	100	137
200 - 599	.00168 - .00322	56	44	100	210
200 - 599	Zero - .00167	69	31	100	408
17 - 199	.00323 - .05882	77	23	100	164
17 - 199	Zero - .00167	78	22	100	592
		58	42	100	2470

7 df, chi-square = 320.48, $P < .0001$

Note: In this and the other tables of this chapter, a percentage is underlined if the chi-square value for that cell was greater than .5.

In addition to the effect of the two variables combined as in Table XI-3, the effect of each variable was tested for significance with the other variable held constant. Table XI-4 shows that enrollment was significantly associated with level of education regardless of counselor-student ratio, and Table XI-5 shows that counselor-student ratio was associated with level of education regardless of enrollment. The actual percentage differences were greater in respect to enrollment than in respect to counselor-student ratio, but both effects were highly significant statistically.

Since much of our attention in this research has turned toward matters of testing in the schools, we also asked the teachers how many courses in the technicalities of testing they had taken (Item 30, Appendix II-B). Table XI-6 shows a pattern for number of courses in testing almost identical with that for level of education in general (i.e., the pattern in Table XI-3). The lower part of the table shows that the relation was significant for counselor-student ratio taken alone.

In brief, the schools of higher counselor-student ratios and the larger schools, compared to the schools in the lower classifications, contained faculties with markedly higher levels of education. Some of the additional courses these teachers had taken were courses in the technicalities of testing, and presumably there were other courses among the total which were related to guidance in one way or another. In addition to the direct effects of technical training, we might well expect increased education to affect attitudes and practices of teachers through the effect of increasing confidence in one's general competence as a teacher. We shall see some interesting relations of education to attitudes and practices as we go along.

Table XI-4. Percentages of Teachers in Schools of Indicated Enrollments Who Had Indicated Levels of Academic Degree, Shown Separately by Counselor-Student Ratio of School.

	Education				
Enrollment	Bachelor's degree or none	Master's or doctor's degree	Total	N	Chi-square
	Couns.-stud. ratio .00323 to .05882				
600 - 5499	28	72	100	247	
200 - 599	61	39	100	137	
17 - 199	77	23	100	164	
	51	49	100	548	90.76 P < .001
	Couns.-stud. ratio .00168 to .00322				
600 - 5499	36	64	100	416	
200 - 599	56	44	100	210	
	43	57	100	626	20.70 P < .001
	Couns.-stud. ratio zero to .00167				
600 - 5499	50	50	100	296	
200 - 599	69	31	100	408	
17 - 199	78	22	100	592	
	69	31	100	1296	74.27 P < .001
		5 df, total chi-square			185.73 P < .001

Table XI-5. Percentages of Teachers in Schools of Indicated Counselor-Student Ratios Who Had Indicated Levels of Academic Degree, Shown Separately for Three Levels of Enrollment.

	Education				
Counselor-student ratio	Bachelor's degree or none	Master's or doctor's degree	Total	N	Chi-square
	Enrollment 600 to 5499				
.00323 - .05882	28	72	100	247	
.00168 - .00322	36	64	100	416	
Zero - .00167	50	50	100	296	
	38	62	100	959	28.06 P < .001
	Enrollment 200 to 599				
.00323 - .05882	61	39	100	137	
.00168 - .00322	56	44	100	210	
Zero - .00167	69	31	100	408	
	64	36	100	755	11.90 P < .01
	Enrollment 17 to 199				
.00323 - .05882	77	23	100	164	
Zero - .00167	78	22	100	592	
	78	22	100	756	0.00 NS
		5 df, total chi-square			39.96 P < .001

Table XI-6. Percentages of Teachers in Crossed Categories of School Size and Counselor-Student Ratio Who Had Taken Indicated Number of Courses in the Technicalities of Testing.

		Courses in testing			
Enrollment	Counselor-student ratio	One course or none	Two or more courses	Total	N
600 - 5499	.00323 - .05882	51	49	100	247
600 - 5499	.00168 - .00322	53	47	100	410
600 - 5499	Zero - .00167	59	41	100	294
200 - 599	.00323 - .05882	64	36	100	137
200 - 599	.00168 - .00322	61	39	100	205
200 - 599	Zero - .00167	62	38	100	407
17 - 199	.00323 - .05882	72	28	100	162
17 - 199	Zero - .00167	72	28	100	589
		62	38	100	2451

7 df, chi-square = 57.31, P < .001

Totals for counselor-student ratios:

	One course or none	Two or more courses	Total	N
.00323 - .05882	60	40	100	546
.00168 - .00322	55	45	100	615
Zero - .00167	66	34	100	1290
	62	38	100	2451

2 df, chi-square = 20.48, P < .001

Practices and Attitudes

Reports on a number of practices associated with getting and using information of various kinds about students were solicited from the teachers in our study, and we now turn to the differences in a number of these practices -- many of which will have attitudinal overtones -- which distinguished schools of higher counselor-student ratio from schools of lower. Since our questionnaires were sent out during a time when much public attention was being devoted to guidance and much expansion of pupil personnel services was being spurred by newly available federal money, one question we asked was whether any innovations or changes had taken place recently in the school.

Innovations

The question asked (Item 16, Appendix II-B) was, "Within the past two years, has your school made any innovations or changes in its testing program, its guidance program, or its counseling services?" Whether this question should be interpreted as a report of practice or an index of attitude depends upon the interest of the reader. To make a change in how things are done is certainly a matter of practice, but it can also be taken to reflect an outlook, perhaps an experimental outlook, on the part of the school administration or the guidance staff. Furthermore, teachers with more interest in guidance matters or with more alertness to them might be more aware of innovations than other teachers. Even between two teachers who were both aware of a change in routine, one might consider it to be merely one of the usual alterations in starting a new year and fail to report it as an "innovation;" the other, perhaps hoping for more from the new way of doing things, might report it to us as an innovation. Some others of our variables also will be seen partly to indicate attitude and partly to indicate practice.

In any case, the percentages of teachers reporting recent innovations differed greatly from one classification of school to another, as can be seen in Table XI-7. The largest percentage of teachers reporting innovations was found among teachers in the schools of over 600 enrollment and having counselor-student ratios in the highest interval; the smallest percentage was found in the schools in the lowest intervals of size and counselor-student ratio. The direct relation of counselor-student ratio with frequency of reported innovations was also tested with size of school held constant, and the relation was found to be highly significant.*

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*The probability of a chance result over-all was less than .001 with 5 degrees of freedom. Within schools in the high range of enrollment, the probability was again less than .001 (2 df, chi-square = 11.51); within schools in the middle interval of enrollment, the probability was less than .01 (2 df, chi-square = 7.34); within schools in the lowest interval of enrollment, the probability was greater than .10 (1 df, chi-square = 1.71).

In other words, schools of higher counselor-student ratios and schools of higher enrollments were the more active -- or at least were perceived so by their teachers -- in trying out new ways of carrying out their guidance activities. The various kinds of innovations or changes mentioned by teachers on their questionnaires included instituting new programs, providing additional personnel or man-hours for existing programs, making changes in scheduling or methods of contacts with students or parents, instituting in-service training or summer

Table XI-7. Percentages of Teachers in Crossed Categories of School Size and Counselor-Student Ratio Who Gave Indicated Answers to the Question, "Within the Past Two Years, Has Your School Made Any Innovations or Changes in Its Testing Program, Its Guidance Program, or Its Counseling Services?"

Enrollment	Counselor-student ratio	Answer to title question No	Yes	Total	N
600 - 5499	.00323 - .05882	16	84	100	239
600 - 5499	.00168 - .00322	28	72	100	398
600 - 5499	Zero - .00167	24	76	100	284
200 - 599	.00323 - .05882	36	64	100	128
200 - 599	.00168 - .00322	28	72	100	202
200 - 599	Zero - .00167	40	60	100	394
17 - 199	.00323 - .05882	40	60	100	155
17 - 199	Zero - .00167	46	54	100	568
		34	66	100	2368

7 df, chi-square = 73.28, $P < .001$

institutes concerning guidance, improving the testing program in one way or another, and so forth. The number of teachers mentioning changes which contracted or weakened the guidance program was insignificant.

Seeking Information about Students

We have seen in earlier chapters that the amount of activity by teachers directed toward learning more about their students was an important condition of the efficacy of the counselor's efforts, even when the teachers' activity was indexed by such an approximate device as asking them how often they took time to gather information about students (Item 14, Appendix II-B). We saw in Table III-18 that this kind of activity did indeed distinguish schools of higher counselor-student ratio from schools of lower, but we shall look into this relation in rather more detail in this chapter because of the importance of information seeking by teachers.

It can be seen from Table XI-8 that information seeking by teachers was related both to counselor-student ratio and to enrollment. The higher frequencies of seeking information tended to be found more often among teachers in schools of the higher counselor-student ratios or among teachers in the schools of larger enrollments or both.*

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*Actually, though the relation between enrollment and information seeking was significant at the .001 level (10 df) with counselor-student ratio controlled, the relation between counselor-student ratio and information seeking with enrollment controlled was significant only at the .10 level (10 df). However, since in actual experience the teacher in the larger school typically found himself in a school of higher counselor-student ratio and since the finding fits so well with other findings, I am willing to accept the relation with counselor-student ratio as part of the total picture. Readers who are purists in the use of

Table XI-8. Percentages of Teachers in Crossed Categories of School Size and Counselor-Student Ratio Who Reported Indicated Amounts of Time They Spent Seeking Information About Students.

		Amount of time spent in seeking information				
Enrollment	Counselor-student ratio	One hour per mon. or less	One hour per week	More than one hour per week	Total	N
600 - 5499	.00323 - .05882	42	35	23	100	243
600 - 5499	.00168 - .00322	37	40	23	100	412
600 - 5499	Zero - .00167	45	36	19	100	293
200 - 599	.00323 - .05882	53	25	22	100	139
200 - 599	.00168 - .00322	57	30	13	100	208
200 - 599	Zero - .00167	59	28	13	100	405
17 - 199	.00323 - .05882	52	33	15	100	162
17 - 199	Zero - .00167	54	30	16	100	589
		50	32	18	100	2451

14 df, chi-square = 67.04, $P < .001$

alpha levels may, if they wish, reject the finding and accept the null hypothesis. However, the reader should not be hasty, because the relation between counselor-student ratio and information seeking becomes significant at the usual level within certain subgroups of teachers, as we shall see in Table XI-12.

It may be a surprise to some readers to discover that teachers spent more time gathering information about students[*] in those schools where counselors were relatively more plentiful and that the converse was true where counselors were more scarce. Since we typically visualize the counselor's duties to include talking to students about their plans and problems, administering tests and inventories of various sorts, looking up information in the school files, and similar information-gathering activities, it would seem within the bounds of reason that teachers would more often tend to relinquish more of these duties to counselors in schools where counselors were more plentiful and that teachers would more often pursue these activities themselves, regardless of the press of their other duties, in schools where counselors were relatively few. We ourselves made no prediction on this matter before the data were in. Yet the results in our data[*] argue strongly that the presence of relatively more counselors catalyzes information-seeking activity by teachers.

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[*] It is very unlikely that the teachers' reports of information seeking were merely wishful thinking or answers of the "social desirability" sort. Our findings discussed in Chapters IV and V (not to speak of those in later chapters) are evidence that teachers' reports of information seeking rested in large measure on fact, since their answers enabled us better to predict the answers of students, as well as the judgments of judges, in respect to certain variables. For examples, see Tables IV-5, 6, 7, 25, and V-13, 14, 16, 17, and 19.

[*] All significance levels are two-tailed.

This seems to me an important result since we have seen fairly strong evidence in our earlier results that supportive activity on the part of teachers is accompanied by greater effectiveness of the efforts of counselors. If the presence of relatively more counselors is accompanied by relatively more coordinate activity by teachers, two questions immediately arise: (1) Will the coordinate activity of teachers continue to rise as even more counselors are added to the staff? (2) What are the other conditions which encourage or discourage the coordination of teacher efforts with counselor efforts? These questions have great practical import. Our data cannot suggest what direction the answer to the first question might take, but we did see some possible answers to the second question in Chapter VI where we discussed the Second and Third Projects. There we saw evidence connecting the teacher's specialized training, length of time at school, and communication to influence and effectiveness on the part of counselors.

An alternative hypothesis might be considered here. There is the possibility that the schools of higher enrollments or higher counselor-student ratios contained more than their share of teachers who had been some years at the same school, and it might be that teachers typically increase their rates of information seeking after their first few years at a new school. Perhaps it takes some time to settle into a new teaching assignment, to learn to use the school files, to get into adequate communication with counselors and other faculty, and the like.* Perhaps, in other words, information seeking might be less related to counselor-student ratio or enrollment than to the teacher's length of service at the school.

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*This seemed to me a not unlikely possibility, since we noted in Chapter VI when examining some results of the Second Project that counselors did not reach their peak communication with faculty until they had been at the school about four years. It seemed possible that information seeking by teachers might be subject to a similar delay.

This turned out not to be the case. Controlling for counselor-student ratio, we distributed time at the school against the teacher's frequency of seeking information about students. The relation within schools in the lowest interval of counselor-student ratio reached the .05 level of significance (8 df, chi-square = 16.86) but the over-all relation was not significant (24 df, chi-square = 30.73). Time at the school was not a significant part of the explanation for differences in frequency of information seeking on the part of teachers.

On the matter of information seeking by teachers it is interesting to compare the responses of principals with the responses of teachers. Principals were asked, "Apart from the actual time they spend in the classroom, about how often would you say that most of your teachers take time out to gather information about students?" The distribution of principals' responses to this question is shown in Table XI-9; the pattern of response there is very similar to that in Table XI-8. Higher estimates of the frequency with which teachers took time to gather information about students were given in the schools of the higher classifications both by teachers and principals while lower estimates were given both by teachers and principals in the schools in the lower classifications. The levels of the estimates, however, were quite different in the two tables. The percentages of principals estimating that most of their teachers took one hour per week or more to seek information were almost uniformly lower than the percentages of teachers reporting this amount of time for themselves. These percentages are listed for comparison in Table XI-10, where

Table XI-9. Percentages of Principals in Crossed Categories of School Size and Counselor-Student Ratio Who Gave Indicated Estimates of Amount of Time Most of Their Teachers Spent Seeking Information About Students.

		Amount of time spent in seeking information				
Enrollment	Counselor-student ratio	One hour per semester	One hour per month	One hour per week or more	Total	N
600 - 5499	.00323 - .05882	3	32	65	100	37
600 - 5499	.00168 - .00322	3	40	57	100	58
600 - 5499	Zero - .00167	12	40	48	100	58
200 - 599	.00323 - .05882	18	39	43	100	33
200 - 599	.00168 - .00322	11	62	27	100	45
200 - 599	Zero - .00167	21	52	27	100	92
17 - 199	.00323 - .05832	15	50	35	100	40
17 - 199	Zero - .00167	23	48	29	100	138
		16	46	38	100	501

14 df, chi-square = 43.02, $P < .001$

Table XI-10. Percentages of Principals in Crossed Categories of School Size and Counselor-Student Ratio Who Estimated That Their Teachers Spent One Hour per Week or More Seeking Information About Students, Compared with Percentages of Teachers in the Same Categories Reporting That They Spent That Amount of Time Seeking Information.

Enrollment	Counselor-student ratio	Percentage of principals	Percentage of teachers
600 - 5499	.00323 - .05882	65	58
600 - 5499	.00168 - .00322	57	63
600 - 5499	Zero - .00167	48	55
200 - 599	.00323 - .05882	43	47
200 - 599	.00168 - .00322	27	43
200 - 599	Zero - .00167	27	41
17 - 199	.00323 - .05882	35	48
17 - 199	Zero - .00167	29	46
	Overall	38	50

it can be seen that in every classification of school except the highest, principals gave the lower estimate of hours spent.

Probably we should pay more attention to the fact that the two columns of percentages in Table XI-10 descend with similar profiles and should give less attention to the fact that the percentages given by principals were smaller than those given by teachers. The discrepancy in level may be due to the different ways in which the question was phrased. For teachers, the question was phrased, "How often do you take time out to gather information...." For principals, it was, "...how often would you say that most of your teachers take time out to gather information...." Even if principals and teachers agreed in their estimates, it might be that the specification "most of your teachers" would have lowered the percentage of principals estimating a certain number of hours in comparison to the percentage of teachers reporting that number of hours for themselves. Perhaps the responses of principals would have been nearer in level to the responses of teachers if we had asked the principals, "...how often would you say the average teacher in your school takes time...." Be that as it may, certainly the similarity in profile of the two columns of Table XI-10 testifies to the reliability of the relation which appeared both in Table XI-8 and Table XI-9.

Education and Information Seeking

One commonly expects (or hopes) that education increases an individual's facility for seeking and obtaining information. One wonders, then, whether this might not apply to seeking information about students as well as to other kinds of information. Dividing the teachers into those with the master's degree or more and those with less than the master's and comparing the percentages reporting various frequencies of seeking information about students, we have the results shown in Table XI-11. The relation between level of education and frequency of seeking information about students was not remarkably strong, but it was clearly beyond what one might expect by chance. Since teachers with higher levels of education tended to occur more frequently in the larger schools and in the schools of higher counselor-student ratios, it seemed advisable to take this relation into account and carry one step further the analysis of the relation between counselor-student ratio and frequency of information seeking about students. Table XI-12 displays the relation between counselor-student ratio and reported frequency of information seeking within six groups of teachers -- the groups being selected according to level of education and size of school.

No significant relation between counselor-student ratio and information seeking appeared among teachers with the master's degree or more, whatever the size of the school. Among teachers with less than the master's degree in schools larger than 200 enrollment, however, the relation became sufficiently pronounced to reach an acceptable level of statistical significance ($P < .02$). Among teachers with less than the master's degree in schools between 600 and 5,500 enrollment, 26 percent of the teachers in schools of high counselor-student ratio reported spending more than one hour per week seeking information about students while only 16 percent of those in schools of low ratio reported this frequency. Among teachers with less than the master's degree in schools of 200 to 600 enrollment, 24 percent of teachers in schools of high

Table XI-11. Percentages of Teachers with Indicated Levels of Academic Degree Who Reported Indicated Amounts of Time They Spent Seeking Information About Students.

Academic degree	Amount of time spent in seeking information: One hour per mon. or less	One hour per week	More than one hour per week	Total	N
Master's or more	43	37	20	100	1016
Bachelor's or less	55	29	16	100	1412
	50	32	18	100	2428

2 df, chi-square = 30.39, P < .001

Table XI-12. Percentages of Teachers in Schools of Indicated Counselor-Student Ratios Who Reported Indicated Amounts of Time They Spent Seeking Information About Students, Shown Separately for Crossed Categories of School Size and Teacher's Level of Academic Degree.

	Amount of time spent in seeking information					
Counselor-student ratio	One hour per mon. or less	One hour per week	More than one hour per week	Total	N	Chi-square
Teachers with master's degree or more in schools of 600 to 5499 enrollment						
.00323 - .05882	44	35	21	100	176	
.00168 - .00322	37	40	23	100	261	
Zero - .00167	37	43	20	100	143	
	39	39	22	100	580	2.84 NS
Teachers with master's degree or more in schools of 200 to 599 enrollment						
.00323 - .05882	47	34	19	100	53	
.00168 - .00322	51	34	15	100	91	
Zero - .00167	50	31	19	100	124	
	50	33	17	100	268	0.52 NS
Teachers with master's degree or more in schools of 17 to 199 enrollment						
.00323 - .05882	42	45	13	100	38	
Zero - .00167	48	32	20	100	130	
	47	35	18	100	168	2.61 NS
10 df, total chi-square for teachers with master's or more						5.97 NS

continued

Table XI-12 (continued)

	Amount of time spent in seeking information					
Counselor-student ratio	One hour per mon. or less	One hour per week	More than one hour per week	Total	N	Chi-square
Teachers with bachelor's degree or less in schools of 600 to 5499 enrollment						
.00323 - .05882	40	34	26	100	65	
.00168 - .00322	36	40	24	100	149	
Zero - .00167	54	30	16	100	144	
	44	35	21	100	358	12.04 P < .02
Teachers with bachelor's degree or less in schools of 200 to 599 enrollment						
.00323 - .05882	55	21	24	100	86	
.00168 - .00322	63	28	9	100	116	
Zero - .00167	63	26	11	100	277	
	62	25	13	100	479	12.90 P < .02
Teachers with bachelor's degree or less in schools of 17 to 199 enrollment						
.00323 - .05882	56	29	15	100	123	
Zero - .00167	55	30	15	100	452	
	55	30	15	100	575	0.05 NS
10 df, total chi-square for teachers with bachelor's or less						24.99 P < .01
20 df, total chi-square						30.96 P < .06

counselor-student ratio reported spending more than one hour per week in seeking information while in schools of lower ratios only 9 to 11 percent of the teachers reported this frequency.

The over-all significance level for Table XI-12 did not quite reach the customary level of .05, but the findings in the table nevertheless seem worthy of our attention since they seem to fit a certain pattern we saw earlier among the responses of students. Namely, we often found in earlier chapters that the efforts of counselors and teachers seemed to be more successful among students of lower academic aptitude compared to those of higher. A corresponding pattern among teachers appears in Table XI-12. Here the general tendency (namely, the tendency for teachers in schools of higher counselor-student ratios to report more frequent information seeking than did teachers in schools of lower ratios) seems not to have held among teachers with the higher level of education but did hold among teachers with less than the master's degree.* The findings of Table XI-12 suggest that the relation we saw in Table XI-11 between education and information seeking was due in large part to the fact that the teachers of higher education were to be found relatively more often in the schools of higher counselor-student ratios.

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*I should mention also that an analysis similar to that of Table XI-12 was made using the number of courses in technicalities of testing teachers had taken in place of their levels of formal education. The over-all significance of the analysis (20 df, $P < .051$) was about the same as that of Table XI-12, and the location of the sub-tables which were individually significant ($P < .05$) was in the places one would expect. The significant relations between counselor-student ratio and frequency of information seeking were found among teachers who had taken one course or none while there was no significant relation among teachers who had taken two or more courses.

Perhaps the educational level of teachers played a part in their pursuit of information about students which was similar to the part played by the intelligence (DAT) of students in their acquisition of knowledge about occupations. That is, the teachers with the more education may have been spending about all the time seeking information about students which a teacher's classroom duties typically allow. Among teachers with the lesser education, on the other hand, those in schools of high counselor-student ratio may have been spurred to do likewise (presuming that an atmosphere of such expectation is found along with a numerous counseling staff) while the teachers of lesser education in schools of low counselor-student ratio may have been devoting larger portions of their time to their regular duties. Put more briefly, the hypothesis is that training to the level of the master's degree or more tends to produce more information seeking on the part of the teacher as compared to training below the master's degree, but that sufficient influence from a guidance staff can make up for too little education on the part of the teacher. Putting the effect of education as primary in this way, the hypothesis implies not only that differences in influence from counselors would make little difference among teachers with the higher level of education (this was the finding in Table XI-12), but also that the effect of being in a school with more counselors would not exceed the effect of having the higher level of education.

The data of Table XI-12 will also enable us to check this latter prediction. Let us tabulate the percentages of teachers who reported spending one hour per week or more in seeking information (that is, summing the two right-hand columns of percentages in Table XI-12) and compare teachers who had the master's degree with those who did not. The tabulation below compares the first section of Table XI-12 with the fourth section. That is, only schools of over 600 enrollment are considered; the first column shows, for teachers with the master's degree within each category of counselor-student ratio, the percentage who spent one hour per week or more seeking information, and the second column shows the percentages for teachers with less than the master's degree.

	Percentage spending one hour per week or more in schools of over 600 enrollment	
Counselor-student ratio	Master's or more	Less than master's
High	56	60
Middle	63	64
Low	63	46
	61	56

Our model for the manner in which education would combine with counselor-student ratio implied that the percentage representing the greatest effect of counselor-student ratio among teachers with the lesser education would not exceed the percentages among teachers with the greater education. The actual percentages above are not as clean as one might wish, although they hover about the expected pattern. The percentage for teachers of the lesser education in schools of the highest counselor-student ratio was 60, and this did not exceed the base rate (61) among the teachers of the greater education. (The base rate is the best comparison figure here since we can presume from the analysis of Table XI-12 that the variations in the left-hand column were in most part random deviations from the base rate.) On the other hand, the highest figure in the right-hand column is 64; and this exceeds by one point the highest figures in the left-hand column. However, I shall attribute this latter comparison to the random exuberance of chance and claim that the hypothesis is not contradicted.

A similar tabulation can be made for the second and fifth sections of Table XI-12; that is, for the schools of 200 to 599 enrollment:[*]

	Percentage spending one hour per week or more in schools of 200 to 599 enrollment	
Counselor-student ratio	Master's or more	Less than master's
High	53	45
Middle	49	37
Low	50	37
	50	38

Here again, the highest percentage in the right-hand column fails to exceed the base rate for the left-hand column, and this time there are no anomalies. In brief, the figures support our idea that the training effect was primary, but that influence from the counseling staff (or from some characteristic of the school associated with having a numerous counseling staff) could make up for a deficiency of training in encouraging teachers to spend more time in seeking information about students. If this finding is reliable, it could be an important guide to policy for the administrator who wishes to increase his teachers' use of information about students. But the precise effects of training and communication with counselors are surely not simple, and the whole matter calls out for more precise research.

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[*] It is not surprising that the schools of 17 to 199 enrollment give little aid to our hypothesis since those with high counselor-student ratios typically contained one counselor or a fraction of a counselor. We should not expect one counselor to have the same "atmospheric" effect on a faculty which a group of counselors would have, even if the counselor-to-teacher ratio were the same. Nevertheless, the figures for the small schools in no way contradict our hypothesis.

A final note needs to be entered here concerning ways of interpreting the teachers' responses concerning their efforts in seeking information about students. The complete question (Item 14, Appendix II-B) asked of teachers was this:

> "Apart from the actual time you spend in the classroom, about how often do you take time out to gather information about students? (For example, looking up records, conferring with parents, consulting with the guidance counselor, etc.)"

The underlined phrase was not underlined in the questionnaire, but it is this phrase upon which I wish to comment. Since the respondent's attention was drawn to consulting with the guidance counselor as one way of seeking information about students, no doubt some of the relation between the counselor-student ratio in the school and the teacher's frequency of information seeking was due to sheer differences in the availability of counselors for consultation. Possible "atmospheric" effects of higher counselor-student ratio should be discounted by this possibility. Nevertheless, it is obvious that consultations with the counselor account for only a small part of the differences we have been discussing since there was at least one large group of teachers which did not report differences in frequency of information seeking associated with differing counselor-student ratios; namely, the teachers with the master's degree or more whose responses were tabulated in the first half of Table XI-12. Furthermore, we saw in connection with Table XI-8 that there was an effect of the size of the school even aside from the counselor-student ratio. With counselor-student ratio controlled, a significant relation with enrollment would not have shown up if the responses to the question were affected to an important degree by the phrase mentioning consulting with the counselor. I believe we can take the tabulations presented in this section as evidence for the central theme of this chapter; namely, that faculty attitudes and practices were different in the schools of the higher counselor-student ratios than they were in the schools of the lower. In this instance, the difference to which I am pointing is the difference in amount of information seeking by teachers, whatever the source of information the teachers used.

Kinds of Information in School Files

Another feature of the guidance program which differs from school to school is that of collecting and maintaining information about students. Since we asked teachers about the kinds of information about students which could be found in their school files, it was possible to compare schools of high and low counselor-student ratio in respect to this feature also.

Teachers were presented with a list of ten kinds of information about students[*] and were asked to check those kinds which could be

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[*] Performance in school subjects, family and home life, non-academic skills and abilities, intelligence and academic aptitude, fears and worries, esthetic and artistic abilities, aspirations and ambitions, interest, personality and character, and health.

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found in the school's files (Item 10, Appendix II-B). The numbers of kinds of information checked varied remarkably from teachers in one classification of school to teachers in another, as can be seen in Table XI-13. Among teachers in the highest intervals of school size and counselor-student ratio, only 12 percent said that three or fewer kinds of information could be found in the school files while 43 percent said that seven or more kinds could be found. Among teachers in the lowest intervals of school size and counselor-student ratio, these percentages were substantially reversed, with 48 percent of the teachers saying that three or fewer kinds of information were available in the school files and only 8 percent saying that seven or more kinds were available. These responses were tested for their direct association with counselor-student ratio with size of school held constant, and the relation was found to be highly significant (15 df, $P < .001$). This relation seems remarkably strong and adds a good bit to our picture of the conditions in the various classifications of schools concerning the availability of information. No doubt the reports of the teachers mirrored reality to a substantial degree in respect to the comprehensiveness of the school files.[*]

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[*] However many kinds of information the teacher believed available to the teacher, the connection seemed to have been tenuous

Table XI-13. Percentages of Teachers in Crossed Categories of School Size and Counselor-Student Ratio Who Reported Indicated Numbers of Kinds of Information About Students to Have Been Available in the School Files.

Enrollment	Counselor-student ratio	Number of kinds of information 1-3	4	5-6	7-10	Total	N
600 - 5499	.00323 - .05882	12	16	29	43	100	247
600 - 5499	.00168 - .00322	21	17	30	32	100	415
600 - 5499	Zero - .00167	32	14	30	24	100	297
200 - 599	.00323 - .05882	30	17	28	25	100	141
200 - 599	.00168 - .00322	29	17	32	22	100	210
200 - 599	Zero - .00167	44	19	26	11	100	403
17 - 199	.00323 - .05882	43	18	25	14	100	163
17 - 199	Zero - .00167	48	23	21	8	100	593
		34	18	27	21	100	2469

21 df, chi-square = 284.87, $P < .001$

with the number of kinds of information the student believed the teacher had about the student since we saw in Chapter IX that students' reports of what kinds of information their teachers had about them did not vary significantly with the counselor-student ratio of the school.

Kinds of Tests Administered

Having looked at kinds of information about students considered without regard to the method of obtaining the information, let us turn now to a particular method of obtaining information about students; namely, that of using standardized tests. We presented the teacher with six types of standardized tests* and asked him to check those which were being administered in his school (Item 17, Appendix II-B). The percentages of teachers checking various numbers of kinds of tests administered are shown in Table XI-14. Here again, we see a very strong relation with 87 percent of the teachers in the highest classification of school reporting four or more kinds of tests administered but only 43 percent of the teachers in the lowest classification of school reporting this many. Here again, the sources and kinds of information must have seemed more fulsome to teachers in schools of higher counselor-student ratios and enrollments than to teachers in schools of lower ratios and enrollments.*

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*Intelligence, academic aptitude (college preparatory), achievement in subject fields, achievement in reading, interest, and personality.

*And again, the connection with student perceptions was tenuous. We saw in Table VII-1 that the percentage of students aware that the school gave standardized tests was not significantly related to counselor-student ratio.

Table XI-14. Percentages of Teachers in Crossed Categories of School Size and Counselor-Student Ratio Who Reported Indicated Numbers of Kinds of Test Being Administered in Their Schools.

		Number of kinds of test administered			
Enrollment	Counselor-student ratio	0-3	4-6	Total	N
600 - 5499	.00323 - .05882	13	87	100	198
600 - 5499	.00168 - .00322	30	70	100	349
600 - 5499	Zero - .00167	43	57	100	262
200 - 599	.00323 - .05882	43	57	100	128
200 - 599	.00168 - .00322	30	70	100	182
200 - 599	Zero - .00167	56	44	100	363
17 - 199	.00323 - .05882	49	51	100	152
17 - 199	Zero - .00167	57	43	100	532
		43	57	100	2166

7 df, chi-square = 173.55, $P < .001$

Do Teachers Look Up Test Scores?

The previous two sections dealt with reports on the varieties of information about students available in the school, and the section before these dealt with the frequency with which teachers sought such information. Our questionnaires also gave us reports on the proportions of teachers who made use of a particular source of information; namely, test results. Principals were asked, "About how many of your teachers would you say make it a point to look up the test scores of their students?" For teachers, the question (Item 22, Appendix II-B) was phrased, "About how many teachers in your school would you say make it a point to look up the test scores of students?" Among principals the relation of answers to this item with crossed categories of school size and counselor-student ratio was significant at the .001 level (14 df). Table XI-15 shows, among principals, the relation of answers to this item with counselor-student ratio, controlled on size of school. It can be seen that the relation was generally strong but contained a perplexing reversal within schools largest in size and highest in counselor-student ratio. This reversal in the top line of the table might very well be a chance result (N was only 37), and the best conclusion would seem to be that principals in the schools of the higher counselor-student ratios tended to give higher estimates of the proportion of their teachers who made it a point to look up test scores, while principals in the schools of lower counselor-student ratios gave smaller proportions.

Interestingly, teachers did not seem to agree very well with their principals on this matter. Among teachers, the relation of answers to the question with crossed categories of size of school and counselor-student ratio was significant at the .001 level (21 df),

Table XI-15. Percentages of Principals in Schools of Indicated Counselor-Student Ratios Who Gave Indicated Answers to the Question, "About How Many of Your Teachers Would You Say Make It a Point to Look Up the Test Scores of Their Students?" Shown Separately for Three Levels of Enrollment.

	Answer to title question					
Counselor-student ratio	Almost none or less than half	More than half	Almost all	Total	N	Chi-square
Enrollment 600 to 5499						
.00323 - .05882	49	40	11	100	37	
.00168 - .00322	20	48	32	100	59	
Zero - .00167	53	37	10	100	60	
	40	42	18	100	156	15.57* P < .01
Enrollment 200 to 599						
.00323 - .05882	38	21	41	100	34	
.00168 - .00322	41	41	18	100	46	
Zero - .00167	52	32	16	100	93	
	46	32	22	100	173	12.50 P < .02
Enrollment 17 to 199						
.00323 - .05882	39	38	25	100	40	
Zero - .00167	52	33	15	100	137	
	49	34	17	100	177	3.69 NS
				10 df, total chi-square		31.76 P < .001

* Chi-square counted only from those cells whose direction does not contradict rest of table.

but the pattern was irregular with no clear monotonic trend. Furthermore, when teachers' answers to the item were thrown against counselor-student ratio with size of school controlled, the result was not significant at any customary level (15 df).

Whether more teachers actually did look up test scores in schools of higher counselor-student ratios compared to schools of lower is uncertain (perhaps even dubious) from these results. At least we can say that the schools of the higher counselor-student ratios tended to have principals who were more optimistic about their teachers in this respect.

Conveying Standardized Test Results to Teachers

We can next look into the care taken by the school to get test results to teachers. Item 21 of the teacher's questionnaire (see Appendix II-B) asked, "How do you and the other teachers find out what test scores students made, once the scores are reported to the school?" The open-ended answers were coded as follows:

0 Merely available; any may look them up who wish; etc.
1 Available from guidance office or counselor.
2 Results sent to parents or students through teacher.
3 Results sent to teacher.
4 Copies of results sent to teacher for him to keep.
5 Faculty meetings or conferences held to discuss results.
6 Don't get results. (Answers here were negligible in number.)

Table XI-16 displays for each classification of school the percentage of teachers giving the first kind of answer (merely available) against the percentage giving all other kinds of answers. We called the latter methods of conveying test results "regulated" methods. There were very great differences between the several classifications of

Table XI-16. Percentages of Teachers in Crossed Categories of School Size and Counselor-Student Ratio Who Gave Indicated Types of Answer to the Question, "How Do You and the Other Teachers Find Out What Test Scores Students Made, Once the Scores are Reported to the School?"

		Type of answer			
Enrollment	Counselor-student ratio	Available	Regulated*	Total	N
600 - 5499	.00323 - .05882	27	73	100	223
600 - 5499	.00168 - .00322	42	58	100	363
600 - 5499	Zero - .00167	44	56	100	254
200 - 599	.00323 - .05882	54	46	100	119
200 - 599	.00168 - .00322	47	53	100	196
200 - 599	Zero - .00167	75	25	100	364
17 - 199	.00323 - .05882	63	37	100	147
17 - 199	Zero - .00167	73	27	100	529
		56	44	100	2195

14 df, chi-square = 244.62, $P < .001$

* Obtainable from counselor, sent to parents through teacher, copy sent to teacher, teacher keeps copies, or special meetings held.

schools. In schools in the highest intervals of size and counselor-student ratio 73 percent of teachers reported regulated methods being used to convey test results to them, while in schools of the lowest classification only 27 percent of the teachers reported regulated methods being used.

The relation was also tested against counselor-student ratio alone with size of school held constant. This relation was still significant at the .001 level (5 df).

The schools of the higher counselor-student ratios, in brief, appeared to have been going to more trouble to get test results into the hands of the teacher. This result stimulates some speculation about the results in the preceding section. There we saw that the counselor-student ratio of the school apparently made a difference in the proportion of teachers the principal believed made it a point to look up test scores, but counselor-student ratio had no significant effect on the proportion of teachers estimated to do so by the teachers themselves. In the results of the present section, however, we find the teachers telling us that schools of higher counselor-student ratios went to more trouble than did schools of lower ratios to see that the teachers received test results. Did "making it a point to look up test scores" mean something different from the principal's viewpoint than from the teacher's? Did the principal feel that teachers must be "looking up" test scores if the results were in charge of the counselor, if written reports were sent to or through the teacher, if discussion meetings were held, and the like? But did teachers feel they were "looking up" test scores only if they walked down the hall to do so and if they did this on their own initiative? Our present data do not permit us to do more than speculate. The efficacy of various methods of conveying information in schools can without doubt stand further investigation.

Discussing Test Results with Parents

Pursuing our comparison of schools of higher counselor-student ratios with those of lower, we next turn to one of the uses teachers might make of test results. Item 32 of the teacher's questionnaire (Appendix II-B) asked, "In talking with parents about their children, do you discuss test results with them?" The distribution of answers over the several cross-classifications of schools is shown in Table XI-17. In this case, the major differences turned out to be associated with differences in size of school and (as we shall see) with the number of courses in testing the teacher had taken.

Testing the reported frequency of discussing test results with parents against counselor-student ratio, with size of school held constant (5 df), the result did not show statistical significance. On the other hand, testing frequency of test discussion against the number of courses in the technicalities of testing the teacher had taken, again with size of school held constant, the result was significant at the .001 level (3 df) with teachers who had taken more courses being the more ready to discuss test results with parents.

Were the differences between teachers in different sizes of school due to the fact that the larger schools typically contained the teachers with the higher levels of training? Table XI-18 throws frequency of discussing test results with parents against the size of school while

Table XI-17. Percentages of Teachers in Crossed Categories of School Size and Counselor-Student Ratio Who Gave Indicated Answers to the Question, "In Talking with Parents About Their Children, Do You Discuss Test Results with Them?"

		Frequency of discussing test results			
Enrollment	Counselor-student ratio	Rarely or never	Sometimes or frequently	Total	N
600 - 5499	.00323 - .05882	41	59	100	239
600 - 5499	.00168 - .00322	38	62	100	407
600 - 5499	Zero - .00167	45	55	100	292
200 - 599	.00323 - .05882	54	46	100	136
200 - 599	.00168 - .00322	45	55	100	205
200 - 599	Zero - .00167	54	46	100	400
17 - 199	.00323 - .05882	61	39	100	163
17 - 199	Zero - .00167	56	44	100	570
		49	51	100	2412

7 df, chi-square = 47.45, $P < .001$

Table XI-18. Percentages of Teachers in Schools of Indicated Enrollments Who Gave Indicated Answers to the Question, "In Talking with Parents About Their Children, Do You Discuss Test Results with Them?" Shown Separately for Teachers Having More and Fewer Courses in the Technicalities of Testing.

	Frequency of discussing test results					
Enrollment	Rarely or never	Sometimes or frequently	Total	N	Chi-square	
		Two or more courses in testing				
600 - 5499	33	67	100	425		
200 - 599	39	61	100	276		
17 - 199	47	53	100	212		
	38	62	100	913	12.18	P < .01
		None or one course in testing				
600 - 5499	48	52	100	501		
200 - 599	59	41	100	464		
17 - 199	61	39	100	515		
	56	44	100	1480	21.99	P < .001
		4 df, total chi-square			34.17	P < .001

holding constant (at least roughly) the number of courses in testing the teacher had taken. It can be seen that the relation still remained highly significant; apparently, some characteristic of the larger schools compared to the smaller led to more frequent discussion of test results between teachers and parents -- or at least to reports of more frequent discussions.

Conveying Standardized Test Results to Parents

Talking with parents about test results is, of course, one way of conveying test results to them. Getting at the question of whether the school had a regularized procedure for transmitting test results to parents, we asked (Item 31, Appendix II-B), "Does your school ever give test results to parents? ...If yes, how and on what occasions or under what circumstances is this done?" We have already seen in Table VII-25 that 84 percent of all principals reported that test results were given to parents, and the percentages of principals saying this did not vary much over schools of different counselor-student ratios.* When the manner of conveying test results to parents was considered, however, we saw in Table VII-26 that the percentages of principals reporting regulated manners of conveying test results differed (though in an irregular manner) in schools of different counselor-student ratios. Let us now turn to the reports of teachers.

The percentages of teachers giving various answers to the item are shown in Table XI-19 for each interval of counselor-student ratio

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*Some views of a national sample of teachers on whether test results should be transmitted to parents are shown in Appendix XI-B.

Table XI-19. Percentages of Teachers in Schools of Indicated Counselor-Student Ratios Who Said that School Did and Did Not Give Standardized Test Results to Parents, and if so, in What Manner Results Were Conveyed; Shown Separately by Size of School.

	Whether school gave test results to parents and if so, how							
Counselor-student ratio	No	Uncertain	Yes, available	Yes, regulated	Total	N	Chi-square	
Teachers in schools of 600 - 5499 enrollment								
.00323 - .05882	11	37	8	44	100	242		
.00168 - .00322	12	36	8	44	100	413		
Zero - .00167	13	46	9	32	100	294		
	12	39	9	40	100	949	13.25	$P < .05$
Teachers in schools of 200 - 599 enrollment								
.00323 - .05882	15	38	11	36	100	140		
.00168 - .00322	12	37	13	38	100	208		
Zero - .00167	18	46	12	24	100	400		
	16	42	12	30	100	748	16.69	$P < .02$
Teachers in schools of 17 - 199 enrollment								
.00323 - .05882	20	48	12	20	100	163		
Zero - .00167	21	44	12	23	100	584		
	21	45	12	22	100	747	1.29	NS
					15 df, total chi-square		31.23	$P < .01$

and with the relation between these two variables tested within each interval of school size. Taking a moment to compare Table XI-19 with Table VII-25, we can note first of all that about the same proportions of teachers and principals reported that their schools did not give test results to parents. The percentages in the "no" column of Table XI-19 run close to those in the "no" column of Table VII-25. The outstanding difference between the two tables lies in the percentage of "uncertain" answers. The percentage of principals who were uncertain was negligible, but more than a third of the teachers said they were uncertain.

The trend in Table XI-19 also follows that in Table VII-26. Teachers in the schools of higher counselor-student ratios tended to give "yes" answers and describe regulated methods of conveying test results to parents, while teachers in schools of the lower counselor-student ratios tended more often to be uncertain whether test results were conveyed to parents at all. Putting together Tables XI-19 and VII-26, it seems reasonable to conclude that the schools of the higher counselor-student ratios no more frequently gave test results to parents than did schools of the lower ratios; but, when they did transmit test results to parents (and perhaps 84 percent did so), they more often took the trouble to do so in a regulated manner and the teachers were more often aware that this was so. This tendency was associated with differences in school size -- the shape of the relation can be seen in the subtotals in Table XI-19 -- as well as with counselor-student ratio. When the type of answer to the item about conveying test results to parents was tested against size of school with counselor-student ratio held constant, the relation was found to be significant at the .001 level (10 df).

Apparently, students and teachers were about equally aware of whether and how test results were conveyed to parents in the schools in the several intervals of counselor-student ratio. Comparing Table XI-19 with Tables VII-24 and 27,* the trend among students over schools of different counselor-student ratios is seen to have been very similar to the trend among teachers and even the percentages were fairly close in the corresponding parts of the tables.

In regard to knowledge of what is going on in a school, the thought immediately occurs that it takes a little time for a new teacher to learn what is going on. Accordingly, we divided teachers by the length of time they had been at the school and examined the percentages of teachers within each group who gave different kinds of answers when asked whether the school gave test results to parents. Dividing teachers into those who had been at their schools five years or more and those who had been there four or fewer years, we have the results shown in Table XI-20. Just as we expected, the teachers relatively new at the school were relatively more often uncertain whether the school gave test results to parents while the teachers who had been longer at the school more often gave positive answers -- typically, these were "yes" answers since it was actually more often the case that the school did give standardized test results to parents.

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*See also Tables VII-19, 20, and 28.

Table XI-20. Percentages of Teachers with Indicated Years at School Who Said that School Did and Did Not Give Standardized Test Results to Parents; Shown Separately by Size of School.

Years at school	Whether school gave test results to parents: No	Uncertain	Yes	Total	N	Chi-square	
Teachers in schools of 600 - 5499 enrollment							
5 or more	13	32	55	100	486		
1 to 4	11	48	41	100	461		
	12	40	48	100	947	26.47	P < .001
Teachers in schools of 200 - 599 enrollment							
5 or more	18	32	50	100	336		
1 to 4	15	50	35	100	411		
	16	42	42	100	747	22.39	P < .001
Teachers in schools of 17 - 199 enrollment							
5 or more	24	33	43	100	253		
1 to 4	19	50	31	100	491		
	21	44	35	100	744	20.57	P < .001
			6 df, total chi-square			69.43	P < .001

Another variable which comes readily to mind when matters of knowledge are being considered is education. Table XI-21 shows type of answer to the item about conveying test results thrown against level of education of the teacher. The table indicates that teachers with the higher level of education considerably more often gave "yes" answers instead of "uncertain" answers.

The findings just recounted concerning the effects of time at school and of education are interesting because they reiterate the importance of individual characteristics in determining what the school is like, phenomenally, for the teacher. Cognitive structure previously formed, as by formal education, affects the teacher's clarity of knowledge about the manner in which the school conveys test results to parents because it enhances the teacher's ability to find meaning and noteworthiness in those happenings through which test results are indeed transmitted to parents. Time at school, or time to notice what is going on and to put meaning upon the events, obviously has a similar effect.

The previous section mentioned the relation between training and a certain kind of communication; namely, that of discussing test results with parents. There, too, a characteristic of the individual -- his training in matters of testing -- was important. Where the topic of communication is a technical matter such as testing, openness of communication channels or personal attraction between the individuals is not enough to maintain communication; there must be a minimum degree of understanding of the subject matter, at least on the part of one person, so that the necessary concepts can be entered into the conversa-

Table XI-21. Percentages of Teachers Having Indicated Levels of Academic Degree Who Said that School Did and Did Not Give Standardized Test Results to Parents; Shown Separately by Size of School.

	Whether school gave test results to parents					
Degree	No	Uncertain	Yes	Total	N	Chi-square
Teachers in schools of 600 - 5499 enrollment						
Master's or more	12	35	53	100	582	
Less than master's	13	46	41	100	365	
	12	40	48	100	947	14.31 P < .001
Teachers in schools of 200 - 599 enrollment						
Master's or more	14	37	49	100	267	
Less than master's	18	44	38	100	480	
	16	42	42	100	747	8.78 P < .02
Teachers in schools of 17 - 199 enrollment						
Master's or more	20	37	43	100	167	
Less than master's	21	47	32	100	577	
	21	44	35	100	744	7.33 P < .05
				6 df, total chi-square		30.42 P < .001

tion and maintained in it.*

Though the findings concerning education and time at school are instructive, we should not stray too far from our central point in this section: that schools of higher counselor-student ratio (and the larger schools) tended more often to transmit test results to parents in regulated ways than did schools of lower counselor-student ratio (or smaller schools). Neither education nor years at the school overwhelmed counselor-student ratio and size of school as predictors of the teacher's type of answer concerning whether the school gave test results to parents. The relation of type of answer to crossed categories of size of school and counselor-student ratio remained significant (42 df, $P < .001$) when controlled for level of education, and the relation also remained significant (56 df, $P < .001$) when controlled both for level of education and for years at school.

Discussing Test Results with Students

As well as being asked how frequently they talked about test results with parents, teachers were also asked (Item 34, Appendix II-B), "In talking with students about their plans and problems, do you discuss test results with them?" Just as we found reported frequency of test discussion with parents to have been significantly related to the number of courses in testing the teacher had taken, so we found that the reported frequency of discussing test results with students also was significantly related to the number of courses in testing the teacher

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[*] Some evidence for this assertion (if formal evidence is needed!) is given by Runkel (1962).

had taken, even with the analysis controlled for size of school, as shown in Table XI-22. However, although we saw earlier that frequency of test discussion with parents was significantly related to enrollment, it turned out that test discussion with students was not significantly related to size of school, to counselor-student ratio, nor to crossed categories of these two variables when the analyses were controlled for number of courses in testing or for level of education.*

It will be recalled that students were asked, "When discussing your future plans with teachers or with a counselor, do they ever mention the scores you made on standardized test?" We saw in Chapter III (Table III-20) that the frequency with which students reported discussion of test results was not significantly related to the counselor-student ratio of the school. In other words, teachers and students both agreed that teachers and students conversed about test results no more often in schools of high counselor-student ratio than in schools of low.

It is interesting that crossed categories of enrollment and counselor-student ratio were associated with differences in the frequency with which teachers talked to parents about test results (Table XI-17) but not with the frequency with which they talked to students about them. Further investigation of such a matter as this might help us to understand how teachers view the usefulness of test results, differences in the reactions of parents and students to tests as sources of information, and the like.

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*One of these relations reached the significance level of .05, but the relation was nonmonotonic and not reasonably interpretable. See the entries in Appendix XI-A for SDT.

Table XI-22. Percentages of Teachers with Indicated Number of Courses in the Technicalities of Testing Who Gave Indicated Answers to the Question, "In Talking with Students About Their Plans and Problems, Do You Discuss Test Results with Them?" Shown Separately by Counselor-Student Ratio of School.

	Frequency of discussing test results					
Courses in testing	Rarely or never	Sometimes or frequently	Total	N	Chi-square	
	Couns.-stud. ratio .00323 - .05882					
Two or more	31	69	100	214		
One or none	41	59	100	320		
	37	63	100	534	5.67	P < .02
	Couns.-stud. ratio .00168 - .00322					
Two or more	19	81	100	272		
One or none	38	62	100	333		
	30	70	100	605	25.15	P < .001
	Couns.-stud. ratio zero to .00167					
Two or more	27	73	100	430		
One or none	40	60	100	835		
	36	64	100	1265	22.08	P < .001
		3 df, total chi-square			52.89	P < .001

Conveying Standardized Test Results to Students

Like frequency of discussion of test results with students, the teachers' reports of methods of conveying test results to students showed no significant relation to counselor-student ratio. Item 33 of the teacher's questionnaire (Appendix II-B) read, "Does your school ever give test results to students? ...If yes, how and on what occasions or under what circumstances is this done?" The percentages of the various kinds of answers to this item for the several intervals of counselor-student ratio, when controlled for level of education of the teacher, are shown in Table XI-23 where it is seen that the relation was not significant. This result agrees with the report of principals which we saw in Chapter VII (Tables VII-33 and 34) and also with the reports of students seen in the same chapter. There, in Table VII-39, we saw that students in schools of the higher counselor-student ratios reported regulated methods being used to convey test results to them no more often than did students in schools of the lower counselor-student ratios. In addition to the results shown in Table XI-23, the teachers' answers to this item failed also to show a significant relation with crossed categories of counselor-student ratio and size of school when controlled on education of the teacher (42 df).

In comparing reports about conveying test results to parents with those about conveying test results to students, we should turn back to Table XI-19 and note that the differences across schools of different counselor-student ratios were chiefly differences in the percentages of teachers reporting regulated methods as against the percentages

Table XI-23. Percentages of Teachers in Schools of Indicated Counselor-Student Ratios Who Said that School Did and Did Not Give Standardized Test Results to Students, and if so, in What Manner Results Were Conveyed; Shown Separately by Level of Teacher's Academic Degree.

	Whether school gave test results to students and if so, how							
Counselor-student ratio	No	Uncertain	Yes, available	Yes, regulated	Total	N	Chi-square	
Teachers with master's degree or more								
.00323 - .05882	15	23	8	54	100	266		
.00168 - .00322	13	17	13	57	100	351		
Zero - .00167	14	24	9	53	100	404		
	14	22	10	54	100	1021	10.93	NS
Teachers with less than master's degree								
.00323 - .05882	15	33	13	39	100	280		
.00168 - .00322	16	28	10	46	100	266		
Zero - .00167	18	31	12	39	100	871		
	17	31	12	40	100	1417	5.33	NS
					12 df, total chi-square		16.26	NS

of teachers uncertain whether test results were given to parents. There is no reliable evidence in the table that schools of the lower counselor-student ratios gave test results to parents more rarely than did schools of the higher ratios, whatever the method used, or that in fact the schools of low counselor-student ratios used regulated methods any more rarely (too many teachers said only that they were uncertain what was done). Consequently, we cannot say from this evidence that counselor-student ratio made any more difference in the method of conveying test results to parents than it did in the method of conveying test results to students. Adding to this evidence the reports of principals shown in Table VII-26, however, one might be willing to adopt the hypothesis (and subject it to further investigation) that schools of higher counselor-student ratios, when they did give test results to parents, did so more often in regulated ways than did schools of lower counselor-student ratios.

In regard to conveying test results to students, the evidence in this chapter and in Chapter VII (including the report of principals in Table VII-34) argues that schools of the higher counselor-student ratios no more frequently used regulated methods of conveying test results to students than did schools of lower counselor-student ratios. The best conclusion we can draw in regard to communication of test results to students is that there may have been somewhat more frequent discussion of test results with students by teachers to the extent that teachers with higher levels of education tended to be concentrated in the larger schools and the schools of higher counselor-student ratio; but taking into account differences in educational level, there was no more frequent discussion of test results between teachers and students in schools of higher counselor-student ratios than in schools of lower; and there was no significant tendency for regulated methods of disseminating test results to students to be used in the one kind of school or the other.

It was true, of course, that schools did differ from one another in the tendency for teachers to talk with students about test results; and we saw in Chapter V that appropriateness of occupational choice in terms of SWTP abilities could better be predicted when frequency of talking with teachers about test results was taken into account along with counselor-student ratio. The results in this chapter and in Chapter V suggest one way in which more support from teachers could be brought to the work of the guidance counselor. That is, the school could hire teachers with more training in testing, could teach the teacher how to utilize test results in discussing the student's occupational plans with him, could arrange easier communication between teacher and counselor with test interpretation in mind, and the like.

In examining differences in practices and attitudes in different kinds of schools (as defined by counselor-student ratio and/or school size), we began by looking at the education of the teachers and at whether recent innovations had been made in testing or guidance practices. We next turned to some selected details in the process of getting and using information about students. After looking at the frequency with which teachers took time out to seek information of any kind (without any specification of the sources from which they sought the information) we turned to one particular source of information in the school, namely, the school files, and presented data on the number of kinds of information the teachers reported to be available in the files. No question was raised at that point, however, about the methods of obtaining the information eventually recorded and placed in the files.

We turned next to a particular method of obtaining information about students; namely, testing. Within this topic, we looked at the number of _kinds_ of information teachers reported as currently being obtained by means of tests and at the manner in which information obtained by testing was conveyed to the teachers. Putting aside, next, consideration of the _kind_ of information obtained through testing, we went on to consider the frequency with which teachers reported using test information (of any kind) in discussions with parents and also the manner in which the school transmitted test results to parents if it did so.

Two aspects of getting information about students have been running through the chapter. One is the _kind_ of information desired, and the other is the _method_ of obtaining the information. Obviously, teachers might have had preferences among the various methods of getting information; they might have felt that certain methods were more efficient or reliable for getting some kinds of information and other methods better for other kinds. If this were so, one could then ask the further question whether counselor-student ratio of the school made any difference in the preferences teachers had for using certain methods for getting certain kinds of information. The teacher's questionnaire gave us data bearing on this question.

Preferred Methods of Getting Information About Students

Item 11 of the teacher's questionnaire (Appendix II-B) consisted of a tabular form laid out very similarly to Table XI-24, with methods of getting information heading the columns and kinds of information about students labeling the rows. The respondent was instructed, "For each kind of information, place an X to indicate the way or ways you think are best for obtaining it." Table XI-24 shows the percentages of the total sample of teachers choosing each method as one of the best ways of obtaining each kind of information.*

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*Columns and rows of the original item have been rearranged so as to push the larger percentages toward the top and toward the left of Table XI-24. For further convenience in examining the table, percentages of 59 or larger (a level chosen arbitrarily) are underlined. Because the instructions allowed respondents to put more than one check in any row or any column, the percentages in Table XI-24 add to 100 neither by rows nor by columns.

"Observe the student" was chosen by teachers more often as one of the best ways to get information about more kinds of information than was any other method offered to respondents by the questionnaire. We interpreted "observing" the student as carrying the meaning of predominantly opportunistic and unsystematized observation. Perhaps the popularity of this method stemmed chiefly from the ease of using it.

While not reaching the popularity of "observe the student," the methods "check school records" and "ask the student" were nevertheless chosen much more often as among the best methods to get information than were the remaining methods. The kinds of information for which the latter two methods were chosen, however, differed somewhat from the

Table XI-24. Percentages of 2474 Teachers Choosing Indicated Methods as One of the Best Ways of Obtaining Indicated Kinds of Information About Students.

Kind of information	Observe the student	Check school records	Ask the student	Ask the parents	Ask other teachers	Administer a test	Ask other students	Ask other adults
Personality and character	84	25	6	12	46	18	18	15
Fears and worries	63	11	50	51	23	12	7	5
Esthetic and artistic abilities	59	18	29	21	38	30	10	5
Performance in school subjects	43	86	7	4	43	32	1	1
Health	49	71	20	42	12	13	2	6
Intelligence and academic apt.	28	72	1	1	22	69	*	*
Interests	53	23	79	33	21	33	8	4
Aspirations and ambitions	27	17	86	37	16	15	4	2
Non-academic skills and abil.	48	23	40	26	28	33	15	7
Family and home life	37	25	42	52	22	4	6	19

Note: To draw attention to the larger percentages, those are underlined which are 59 or larger; percentages not underlined are 53 or smaller. This break was arbitrarily chosen. Percentages sum to 100 neither by row nor by column because each teacher responded to each kind of information and teachers often chose more than one method of obtaining information as a "best" method. Typically, a teacher chose about two methods as "best."

* These percentages were less than one-half percent.

kinds associated with observing the student. Observing the student was relatively unpopular for getting information about intelligence, aspirations, and family life but was chosen most often for getting information about personality, fears and worries, and artistic abilities. Checking school records drew the greatest number of choices as a way of getting information about performance in school subjects, about health, and about intelligence. No more than a quarter of the teachers chose checking school records as one of the best ways to get any of the other kinds of information. "Ask the student" was a method favored by four-fifths of the teachers as one of the best for getting information about interests and aspirations, by half the teachers for information about fears and worries, and by fewer than half for other kinds of information -- by only one percent, for example, for getting information about intelligence. These patterns seem reasonable. It also seems reasonable that "ask other students" and "ask other adults" (by this latter we had in mind ministers, physicians, employers, and the like) were chosen very infrequently for almost any kind of information.

One anomaly in the table stands out. Under "administer a test" we see that 69 percent of the teachers said that this was one of the best ways to get information about intelligence and academic aptitude while only 32 percent of the teachers chose testing as one of the best ways to get information about performance in school subjects. This difference looks odd at first glance since intelligence tests and subject-matter achievement tests are the two types most frequently found in secondary schools. Do more teachers trust the intelligence tests than trust the achievement tests? In respect to finding out about intelligence, more than two-thirds of the teachers chose administering a test as one of the best ways and more than two-thirds chose checking school records; no other methods were close competitors of these two. On the other hand, while only 32 percent of the teachers chose administering a test as one of the best ways of finding out about performance in school subjects, 43 percent chose asking other teachers, 43 percent chose observing the student, and 86 percent chose checking school records. This last choice (checking school records) does not tell us much about the preferred original source of the information since the records presumably include recorded observations of the student, evaluations from other teachers, and recorded test results. The point is that for information about intelligence the teachers overwhelmingly preferred test information and whatever else might be found in the school records while for achievement information fewer chose information from tests than chose asking other teachers, observing the student, or checking for what could be found in the school files.

It is possible that the different percentages choosing testing as one of the best ways to get information of these two kinds is at least partly explained by the relative availability of the two kinds of tests. We learned from the principals in these schools that standardized tests of subject-matter achievement were not as widely available as were tests of intelligence. According to the reports of principals, 98 percent of large schools with relatively many counselors administered intelligence tests and 91 percent administered achievement tests. At the same time, while 92 percent of small schools with no counselors administered intelligence tests, only 64 percent administered achievement tests.*

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*For percentages in other classifications of schools and for the method of selecting these particular classifications of schools, see Table III of Chapter II of Hastings, et al. (1960).

To sum up, intelligence tests were almost universally available and more than two-thirds of the teachers said they were one of the best ways to get such information; more than two-thirds also marked checking school records as one of the best ways to get information about intelligence. Beyond these two methods of getting information about intelligence, less than a third of the teachers chose any other method as being one of the best. As to performance in school subjects, although most schools gave achievement tests, achievement testing was not nearly so widespread as intelligence testing. For getting this kind of information, more teachers chose observing the student, checking school records, and asking other teachers than chose administering a test. Perhaps the difference in choice pattern between methods of getting information about intelligence, on the one hand, and getting information about achievement in school subjects, on the other, was due in large part to the relative availability of tests designed for obtaining the two kinds of information.

Counselor-Student Ratio and Methods of Getting Information

Having looked at some methods favored by teachers for obtaining various kinds of information about students, let us now see whether there were differences in these preferences in schools of different counselor-student ratios. For each method of obtaining each kind of information, a table was constructed to show, within each interval of counselor-student ratio, the numbers of teachers who chose or did not choose that method for obtaining that kind of information. The distribution of choices in the table was then tested for the significance of the relation between counselor-student ratio and choice of that particular method for that particular kind of information. A summary of the results of the eighty tables tested in this manner is shown in Table XI-25.

Twenty-four of the eighty individual tabulations summarized in Table XI-25 showed differences between schools of different counselor-student ratios which were significant at the .05 level or beyond.*

Although the responses tabulated in the eighty tables certainly were not experimentally independent, the 24 significant cases seem sufficiently many so that the over-all outcome should not be considered a chance result.* A chance explanation seems particularly unlikely when we note the regular patterns in Table XI-25 into which the significant cases fell.

Observing the student, the most popular method over-all, was less popular in schools of high counselor-student ratio than in other schools (this is shown by the minus signs) for getting information about artistic abilities, interests, and non-academic skills. In respect to _no_ kind of information was observing the student a method more often

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*Tables corresponding to the significant entries in Table XI-25 are displayed in Appendix XI-C.

*Three of the 80 tables displayed relations which, although significant at the .05 level, were non-monotonic in character and hazardous to interpret. These cases, marked with asterisks in Table XI-25, will not be considered in the remainder of the discussion.

Table XI-25. Significant Relations Between Counselor-Student Ratio of School and Percentage of Teachers Choosing Indicated Method of Getting Information as One of the Best Ways to Get Indicated Kind of Information About Students.

Kind of information	Observe the student	Check school records	Ask the student	Ask the parents	Ask other teachers	Administer a test	Ask other students	Ask other adults
Personality and character	NS	.001(+)	NS	NS	NS	NS	NS	NS
Fears and worries	.05*	.001(+)	NS	NS	.02(+)	NS	NS	NS
Esthetic and artistic abilities	.02(-)	.001(+)	NS	.001(+)	NS	NS	.05(-)	NS
Performance in school subjects	NS	NS	NS	NS	NS	NS	NS	NS
Health	NS	NS	NS	NS	NS	NS	NS	NS
Intelligence and academic apt.	NS	.05(+)	NS	NS	NS	.01(-)	NS	NS
Interests	.001(-)	.001(+)	NS	NS	NS	NS	.05*	NS
Aspirations and ambitions	NS	.001(+)	NS	NS	NS	.01*	NS	NS
Non-academic skills and abil.	.001(-)	.001(+)	.05(+)	NS	NS	NS	NS	.05(-)
Family and home life	NS	.001(+)	.001(+)	.001(+)	.01(-)	NS	NS	.05(-)

Note: The decimal figure indicates the level of significance. The symbol (+) indicates that larger percentages of teachers chose the indicated method (see column heading) of getting information in schools of the larger counselor-student ratios; the symbol (-) indicates that smaller percentages did so in the schools of the larger counselor-student ratios. An asterisk means that the relation was non-monotonic. The symbol NS means that the relation did not reach the .05 level of significance. All statistical tests were by chi-square with 2 df.

preferred by teachers in high-ratio schools than by teachers in other schools. Checking school records was generally favored by more teachers in high-ratio schools than by teachers in other schools (this is shown by the plus signs). The differences across schools of different counselor-student ratios were very highly significant. The preference of teachers in high ratio schools for checking school records compared to teachers in other schools extended to every kind of information except information about performance in school subjects and health. Asking other students and asking other adults, the least preferred methods over-all, were even less popular with teachers in high-ratio schools; for three kinds of information, teachers in high-ratio schools chose these latter two methods significantly less often than did teachers in other schools.

The chief patterns of results apparent in Table XI-25 seem difficult to interpret because there are too many conceivable explanations. Did teachers in the schools of high counselor-student ratio turn more often to the school records because the counseling staffs in those schools had encouraged them to use this kind of information? Or did the teachers turn to the records because their generally higher level of education enabled them to decipher and interpret the records more easily? Did the teachers in the high-ratio schools put less confidence in casual observation of the student because the counselors had taught them to beware of drawing conclusions from this kind of experience, or because the usually larger sizes of their schools and generally larger class sizes gave them too bewilderingly many students to observe? Other possible hypotheses will occur to the reader. Obviously, this is a wide field for further research.

One of the results entered in Table XI-25 fits in nicely with a finding of the Second Project.* The reader may recall that the Second Project focused upon 28 teachers who were given guidance training in a special institute held during the summer of 1959 at the University of Illinois. One of the objectives of the instructors of the institute was to train the counselors-to-be to make use of a wide range of information about students. The training demonstrated the cautions to be observed in drawing inferences about the abilities and future behavior of students from scores on intelligence and achievement tests. Our research produced some evidence* that this cautious attitude toward reliance on test scores transferred to the trainees. A special experimental task was made up in which the trainees were given information about hypothetical students on facsimiles of cumulative record cards. These cards contained test scores and other kinds of information about the fictitious students they described. The trainees were asked to make placement decisions about these students. This task was administered before training and after training, and the results argued that the trainees, on the average, put less weight on the test scores after their training than before.

If the training of counselors in Illinois generally, in regard to the use of test scores, was somewhat similar to that suggested by our results concerning the trainees in the summer institute of 1959 and if counselors were having some influence on the opinions of teachers, then we should expect to find somewhat less confidence in testing among teachers in schools of high counselor-student ratio than among teachers in schools of lower ratios. The entry in Table XI-25 in the column for "administer a test" and in the row for "intelligence and academic aptitude" is consistent with this expectation, showing that teachers in the high-ratio schools chose administering a test significantly less often than did teachers in other schools as one of the best ways of getting information about intelligence. I must admit, of course, that this line of reasoning is both long and thin. More research is sorely needed, both on group trends in the esteem in which sources of information are held and on the actual and potential influence of the counselor on the faculty.*

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*The Second Project was first described in Chapter VI.

*For the full account see Chapter IV of Hastings, et al. (1961), especially Tables IV-2 and 3.

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*A beginning on this last point was made in Chapters IX and X of Hastings, et al. (1961).

Finally, we might note that we examined in Chapter IX the percentages of students in schools of different counselor-student ratios who reported the proportions of their teachers whom they felt had various kinds of information about them; and we found that counselor-student ratio of the school was not significantly related to how well the students felt they were known by their teachers in respect to any of these kinds of information.* Apparently, the preferences for certain methods of obtaining certain kinds of information about students held by teachers in high-ratio schools did not have measurable effects on the awareness the students in high-ratio schools had about the knowledge their teachers had about them as compared to students in schools of lower ratios.

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*We did find, however, that visiting the counselor was related to how well the students felt they were known in respect to their interests, aspirations and ambitions, family and home life, and fears and worries.

Years in Teaching and Preferred Methods of Getting Information

It is often found, both in systematic research and in common experience, that length of time in an occupation is related to practices and attitudes. For example, teachers in our study who had been in teaching ten or more years reported spending somewhat more time seeking information about students than did teachers who had been in teaching fewer than ten years (2 df, $P < .001$). This kind of difference between teachers with greater and lesser experience might well alter the shape of the results we have been discussing if teachers of longer experience were disproportionately represented among schools of different counselor-student ratios.

As a matter of fact, the mean years' experience of teachers in schools of different counselor-student ratios did differ significantly (see Appendix XI-D); but the differences were not montonic. The mean years in teaching of teachers in schools of high counselor-student ratio was 11.6; the mean was 15.6 in middle-ratio schools and 11.2 in low-ratio schools. Since these differences were significant (6 df, chi-square = 79.11, $P < .001$) even if non-monotonic, it seemed worth while looking into schools of different counselor-student ratios to see whether years in teaching was related to teachers' preferences for methods of getting information.

Before paying attention to differences associated with counselor-student ratio, we first looked at the data to discover whether teachers of different lengths of experience in teaching did indeed have different preferences among the methods of getting information about students. Eighty tables were laid out, each distributing length of experience against whether the teacher chose a particular method as one of the best ways of getting a particular kind of information about students. The results of these 80 analyses are summaried in Table XI-26. A few of the tabulations could not be tested for significance because almost all or almost none of the respondents within some length-of-experience bracket chose that particular method for that particular kind of information. Of those relations tested, however, 25 turned out to be significant at the .05 level or beyond.* While remembering that the responses going into the 80 tabulations were not experimentally independent, this proportion of significant results seems sufficient for us to conclude that years in teaching did make a difference in the preferences teachers had for methods of obtaining information.

We can certainly be confident that the results summarized in Table XI-26 are well beyond the bounds of chance when we note that all

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*The tabulations, the outcomes of which are summarized in Table XI-26, were not simple two-variable tabulations. Each was controlled for counselor-student ratio. The actual tabulations for those instances where the relation turned out to be significant at the .001 level are included in this chapter as Tables XI-27 through 34. The actual tabulations for the remaining instances which gave results significant at the .05 level are displayed in Appendix XI-E. A detailed summary of the results of all the tabulations, including the outcomes within each category of counselor-student ratio, is shown in Appendix XI-F.

Table XI-26. Significance of Relations Between Teachers' Years in Teaching and Frequency of Choosing Indicated Method as One of Best Ways to Obtain Indicated Kind of Information About Students, Controlled on Counselor-Student Ratio. (NS means that the relation was not significant at the .05 level and NT means that too few teachers chose the method for the relation to be testable. Except in the one case noted, all significant relations were in the direction of teachers with more years of service less frequently choosing the particular method of obtaining information.)

Kind of information	Ask other teachers	Observe the student	Administer a test	Ask other students	Ask the student	Check school records	Ask the parents	Ask other adults
Health	.05	NS	.01	NT	.02	.01	NS	NS
Personality & character	.01	.01	NS	.001	NS	.01*	NS	NS
Non-acad. skills & abil.	.02	.001	NS	.001	NS	NS	NS	NS
Fears and worries	.02	.001	.05	NS	NS	NS	NS	NS
Perform. in sch. subjects	.001	.05	NS	NS	NS	NS	NS	NS
Family & home life	.001	.01	NS	NS	NS	NS	NS	NS
Intelligence & acad. apt.	.02	NS	.01	NT	NT	.02	NT	NT
Aspirations & ambitions	NS	NS	.001	NS	.05	NS	NS	NS
Esthet. & artistic abil.	NS	.01	NS	NS	NS	NS	NS	NS
Interests	NS	NS	NS	NS	.001	NS	NS	NS

* Opposite in direction to other relations in table; teachers with more years of service more often chose checking school records as one of the best ways to get information about personality and character.

but one of the significant outcomes were in the same direction. That is, in 24 cases of a particular method being chosen as one of the best ways to get a particular kind of information, teachers with more years of experience chose it significantly less often than teachers with fewer years of experience. The one exception was the case of using school records to get information about personality and character.*

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*Even this case seems unlikely to have been a chance deviation from the general pattern since the direction of the relation was the same throughout the tabulation. That is, teachers of longer experience more often chose this method than did teachers of shorter experience within each of the three categories of counselor-student ratio. See Table XI-E-5 in Appendix XI-E.

Since in only one instance teachers of longer experience chose a particular method for a particular kind of information more frequently than did teachers of shorter experience and since they chose particular methods less often in 24 instances, we can draw the general conclusion that teachers of longer experience tended to name fewer methods over-all as best ways to get information than did teachers of shorter experience. That is, they tended to have sharper preferences; fewer methods stood out for them as being "best ways." Did the teachers of longer experience have fewer preferences because experience had taught them the superiority of certain methods for getting certain kinds of information? Or perhaps, since the teachers with longer experience would be older teachers who had been trained earlier than the younger teachers, was this difference due to differences in training in the use of sources of information? To seize upon any one explanation for the more restricted preferences of the teachers with longer experience would at this point be premature. It is obvious, however, that further research upon this matter could turn up information of great use to teacher trainers, to directors of guidance, and to administrators.

Having ascertained that number of years in teaching was associated with different preferences among methods of getting information, we can now turn to schools of different counselor ratios to see whether the relation between years in teaching and preference for information-getting-method was the same as that we have seen in Table XI-26 throughout schools of all counselor-student ratios or whether, on the contrary, the pattern of results was different in schools of different counselor-student ratios. In tabulating the choices of each kind of method for getting each kind of information about students, we had done so within each classification of counselor-student ratio, in the manner shown in Tables XI-27 through 34.* It was therefore possible to lay out a table like Table XI-26 to include only those schools falling in a particular category of counselor-student ratio. The result is shown in Table XI-35. To heighten the contrast, schools in the middle interval of counselor-student ratio are omitted from Table XI-35, which shows only the significant relations found among teachers in schools of high counselor-student ratio in the upper part of the table and those among teachers in schools of low ratios in the lower part.*

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*Tables XI-27 through 34 are the cases significant at the .001 level; the tabulations for the remainder of the cases significant at the .05 level are shown in Appendix XI-E.

*The results for middle-ratio schools can be read directly from Appendix XI-F.

Table XI-27. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Observe the Student" as One of the Best Ways to Get Information About Fears and Worries, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	Percent choosing Yes	Total	N	Chi-square
Couns.-stud. ratio .00323 to .05882					
Over 13	42	58	100	177	
4 to 13	30	70	100	204	
1 to 3	29	71	100	171	
	34	66	100	552	8.36 P < .02
Couns.-stud. ratio .00168 to .00322					
Over 19	48	52	100	215	
7 to 19	42	58	100	236	
1 to 6	32	68	100	174	
	41	59	100	625	11.24 P < .01
Couns.-stud. ratio zero to .00167					
Over 13	43	57	100	392	
4 to 13	36	64	100	508	
1 to 3	31	69	100	397	
	37	63	100	1297	11.60 P < .01
	6 df, total chi-square				31.20 P < .001

Table XI-28. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Observe the Student" as One of the Best Ways to Get Information About Non-academic Skills and Abilities, Shown Separately by Counselor-Student Ratio of School.

	Percent choosing				
Years in teaching	No	Yes	Total	N	Chi-square
Couns.-stud. ratio .00323 to .05882					
Over 13	64	36	100	177	
4 to 13	51	49	100	204	
1 to 3	49	51	100	171	
	55	45	100	552	9.92 P < .01
Couns.-stud. ratio .00168 to .00322					
Over 19	69	31	100	215	
7 to 19	58	42	100	236	
1 to 6	47	53	100	174	
	59	41	100	625	20.66 P < .001
Couns.-stud. ratio zero to .00167					
Over 13	54	46	100	392	
4 to 13	47	53	100	508	
1 to 3	43	57	100	397	
	48	52	100	1297	10.14 P < .01
	6 df, total chi-square				40.72 P < .001

Table XI-29. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Ask the Student" as One of the Best Ways to Get Information About Interests. Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	 Yes	Total	N	Chi-square	
Couns.-stud. ratio .00323 to .05882						
Over 13	31	69	100	177		
4 to 13	19	81	100	204		
1 to 3	16	84	100	171		
	22	78	100	552	12.91	P < .01
Couns.-stud. ratio .00168 to .00322						
Over 19	26	74	100	215		
7 to 19	20	80	100	236		
1 to 6	17	83	100	174		
	21	79	100	625	4.66	P < .10
Couns.-stud. ratio zero to .00167						
Over 13	24	76	100	392		
4 to 13	18	82	100	508		
1 to 3	19	81	100	397		
	20	80	100	1297	6.94	P < .05
	6 df, total chi-square				24.51	P < .001

Table XI-30. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Ask Other Teachers" as One of the Best Ways to Get Information About Performance in School Subjects, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing		Total	N	Chi-square	
	No	Yes				
Couns.-stud. ratio .00323 to .05882						
Over 13	66	34	100	177		
4 to 13	59	41	100	204		
1 to 3	54	46	100	171		
	60	40	100	552	4.34	NS
Couns.-stud. ratio .00168 to .00322						
Over 19	67	33	100	215		
7 to 19	57	43	100	236		
1 to 6	42	58	100	174		
	56	44	100	625	24.69	P < .001
Couns.-stud. ratio zero to .00167						
Over 13	78	32	100	392		
4 to 13	55	45	100	508		
1 to 3	48	52	100	397		
	57	43	100	1297	32.77	P < .001
	6 df, total chi-square				61.80	P < .001

Table XI-31. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Ask Other Teachers" as One of the Best Ways to Get Information About the Student's Family and Home Life, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing		Total	N	Chi-square	
	No	Yes				
Couns.-stud. ratio .00323 to .05882						
Over 13	84	16	100	177		
4 to 13	77	23	100	204		
1 to 3	70	30	100	171		
	77	23	100	552	9.27	P < .01
Couns.-stud. ratio .00168 to .00322						
Over 19	85	15	100	215		
7 to 19	85	15	100	236		
1 to 6	76	24	100	174		
	82	18	100	625	5.46	P < .07
Couns.-stud. ratio zero to .00167						
Over 13	80	20	100	392		
4 to 13	78	22	100	508		
1 to 3	69	31	100	397		
	76	24	100	1297	15.03	P < .001
	6 df, total chi-square				29.76	P < .001

Table XI-32. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Administer a Test" as One of the Best Ways to Get Information About Aspirations and Ambitions, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing					
	No	Yes	Total	N	Chi-square	
Couns.-stud. ratio .00323 to .05882						
Over 13	85	15	100	177		
4 to 13	82	18	100	204		
1 to 3	80	20	100	171		
	82	18	100	552	1.66	NS
Couns.-stud. ratio .00168 to .00322						
Over 19	91	9	100	215		
7 to 19	86	14	100	236		
1 to 6	89	11	100	174		
	88	12	100	625	3.13	NS
Couns.-stud. ratio zero to .00167						
Over 13	90	10	100	392		
4 to 13	85	15	100	508		
1 to 3	78	22	100	397		
	84	16	100	1297	22.27	P < .001
	6 df, total chi-square				27.06	P < .001

Table XI-33. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Ask Other Students" as One of the Best Ways to Get Information About Personality and Character, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	 Yes	Total	N	Chi-square	
Couns.-stud. ratio .00323 to .05882						
Over 13	89	11	100	177		
4 to 13	77	23	100	204		
1 to 3	80	20	100	171		
	82	18	100	552	11.23	P < .01
Couns.-stud. ratio .00168 to .00322						
Over 19	91	9	100	215		
7 to 19	81	19	100	236		
1 to 6	82	18	100	174		
	84	16	100	625	10.54	P < .01
Couns.-stud. ratio zero to .00167						
Over 13	85	15	100	392		
4 to 13	79	21	100	508		
1 to 3	78	22	100	397		
	80	20	100	1297	8.77	P < .02
	6 df, total chi-square				30.54	P < .001

Table XI-34. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Ask Other Students" as One of the Best Ways to Get Information About Non-academic Skills and Abilities, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	 Yes	Total	N	Chi-square	
Couns.-stud. ratio .00323 to .05882						
Over 13	92	8	100	177		
4 to 13	82	18	100	204		
1 to 3	81	19	100	171		
	85	15	100	552	9.29	P < .01
Couns.-stud. ratio .00168 to .00322						
Over 19	91	9	100	215		
7 to 19	86	14	100	236		
1 to 6	87	13	100	174		
	88	12	100	625	3.34	NS
Couns.-stud. ratio zero to .00167						
Over 13	89	11	100	392		
4 to 13	82	18	100	508		
1 to 3	82	18	100	397		
	84	16	100	1297	11.02	P < .01
	6 df, total chi-square				23.65	P < .001

Table XI-85. Significance of Relations Between Teachers' Years in Teaching and Frequency of Choosing Indicated Method as One of Best Ways to Obtain Indicated Kind of Information About Students, Shown Separately Within Schools of High Counselor-Student Ratio and Within Schools of Low Counselor-Student Ratio. (Figures in body of table show the significance level of the relation; only relations significant at least at the .05 level are entered. All relations shown here as significant within schools of high or low counselor-student ratio were in the direction of teachers with more years of service less frequently choosing the particular method of obtaining information. Underlining indicates a relation which was significant within schools of high counselor-student ratio but not in schools of low, or vice versa.)

Kind of information	Ask other teachers	Observe the student	Administer a test	Ask other students	Ask the student	Check school records	Ask the parents	Ask other adults
Counselor-student ratio .00323 to .05882								
Health					.001			
Personality and character				.01				
Non-academic skills and abilities		.01						
Fears and worries	.03	.02		.01				
Performance in school subjects		.05						
Family and home life	.01	.03						
Intelligence and academic apt'ude								
Aspirations and ambitions								
Esthetic and artistic abilities								
Interests					.01			
Counselor-student ratio zero to .00167								
Health	.02		.02			.001		
Personality and character		.01		.02				
Non-academic skills and abilities	.03	.01		.01				
Fears and worries		.01	.01					
Performance in school subjects	.001		.05					
Family and home life	.001	.01						
Intelligence and academic apt'ude			.001					
Aspirations and ambitions	.01		.001					
Esthetic and artistic abilities		.05						
Interests	.05				.05			

Like Table XI-26, Table XI-35 displays those relations between years in teaching and frequency of choosing a particular method for obtaining a particular kind of information about students which were significant at the .05 level or beyond. Table XI-26 showed these results for all schools with counselor-student ratio held constant, but Table XI-35 shows the results within schools of high counselor-student ratio and within those of low ratio separately.

It is obvious at a glance that differences in the preferences of teachers with different lengths of experience were much more frequent in schools of low counselor-student ratios than in schools of high. It seems possible (remembering that the responses underlying the table were not experimentally independent) that the nine significant outcomes shown in schools of high ratios was a number not far beyond chance. On the other hand, 20 significant outcomes appeared in schools of low counselor-student ratios; and they fell chiefly under three methods of obtaining information: ask other teachers, observe the student, and administer a test.

The conclusion seems reasonable, if tentative, that there were marked differences between teachers in the low-ratio schools but not between teachers in the high-ratio schools. More precisely, in the schools of low counselor-student ratio, there was a clear trend for teachers of longer experience to show less frequent preferences for asking other teachers about students, observing the student, and administering a test than did teachers of shorter experience. Among teachers in schools of high counselor-student ratio, on the other hand, it is dubious whether there were reliable differences between teachers of longer and shorter experience in teaching. To put this another way, "older" and "younger" teachers in schools of high counselor-student ratio were much more similar to each other in their preferences for methods of getting information than were "older" and "younger" teachers in schools of low ratios.

What could explain this difference between schools of high counselor-student ratio and schools of low? The methods of getting information showing the greatest difference in relation to years in teaching between schools of high and low counselor-student ratios were asking other teachers and administering a test. Neither of these methods showed very great differences in popularity in schools of different counselor-student ratios (see Table XI-25); yet we see in Table XI-35 that where counselors were few these methods were very much more popular among teachers of shorter teaching experience than among teachers of longer experience while in schools where counselors were relatively more numerous these methods received roughly equal popularity from the "older" and "younger" teachers. Did the counselors influence teachers selectively, in such a manner as to persuade the older teachers to use these methods more often? Or did they tend to persuade the younger teachers to use these methods less often? Inasmuch as older teachers tended to have fewer preferences over-all, is the explanation of Table XI-35 simply that counselors tended to persuade the older teachers to have more preferences -- to range more widely in their preferences? Or did counselors persuade the younger teachers to focus their preferences more sharply?

Perhaps we can take some hint from the results for the method "administer a test." We have mentioned some evidence that counselors might have been more cautious in using test information than teachers untrained in guidance and testing. If this were so, then the results in Table XI-35 under the heading "administer a test" might have been due to influence from counselors upon the younger teachers which led them to choose administering a test less often as one of the best ways to get information. But this explanation can be considered only the merest possibility. The possible explanations are many; further research might show the pattern in Table XI-35 to have very little to do with counselor-student ratio directly. In fact, the pattern in the table might not reappear at all in further research. Obviously, we need to know more than we do about differences between teachers and counselors in their preferences for methods and sources of information about students.*

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*An attempt was made in the Second Project to make an inroad upon this question; see Chapter VI of Hastings, et al. (1961). A direct comparison with the results here cannot be made since the chief emphasis in the Second Project was upon the usefulness of different kinds of information for different purposes. It is suggestive, however, that although interesting differences in preferences for kinds of information appeared in connection with differences in training, there were no differences between teachers and counselors as such in their preferences for certain kinds of information to be used for certain kinds of purposes.

To sum up this section, we have seen two kinds of differences between schools of higher and lower counselor-student ratios in respect to preferences of teachers for particular ways of getting information about students. In connection with Table XI-25, we saw that teachers in schools of higher counselor-student ratio, compared to teachers in schools of lower, more often chose checking school records as one of the best ways to get information and less often chose observing the student, administering a test, asking other students, and asking other adults, speaking generally. In connection with Table XI-35, we saw that teachers in schools of high counselor ratio were in general more similar in their preferences for ways of getting information than were teachers in schools of low counselor-student ratio.

Recapitulation

We have seen that a number of attitudes and practices reported by teachers tended to be different in schools of higher counselor-student ratios than in schools of lower. Sometimes, it is true, these differences seemed more closely associated with size of school than with counselor-student ratio. It should be kept in mind, however, that our strategy in this chapter was to imagine ourselves walking into schools of lower counselor-student ratios on the one hand and of higher ratios on the other hand, talking with teachers, and taking note of differences we found between schools of the different ratios. Under such a strategy, many differences we would find might not be the result of influence (or lack of it) from counselors; some of the differences might stem, for example, from differences in school budgets. Nevertheless, from wherever the differences might arise, delineating some of the differences in practices and attitudes can help us to understand the conditions under which counseling at present takes place. It can help us to understand the normative social environment within which guidance services come to students. Size of school was one of the characteristics which somewhat went along with counselor-student ratio; the larger schools were more often than not those with the higher counselor-student ratios. However, because enrollment was only moderately related to counselor-student ratio, it added some detail to the picture as we went along. Actually, size of school, counselor-student ratio, and level of education of the faculty formed a cluster of three positively interrelated variables; a school which was high on one of these variables was most likely high on the other two also.

Many of the particular findings in this chapter were summarized at the outset in Table XI-1; it seems unnecessary to repeat them here. The general picture, however, was that the schools high in counselor-student ratio (and/or of large size) were in comparison with other schools more visibly active in guidance matters. They provided a wider range of materials for use in guidance, initiated more processes, and put more structure on those processes. The schools in our higher classifications provided more kinds of information in the school files, administered more kinds of tests, and were carrying out more changes in their guidance programs. The teachers more frequently sought information about their students. More of these schools gave test results to parents than did schools of lower counselor-student ratios (and/or of small size), and teachers in these schools more frequently discussed test results with parents. These schools took more trouble to convey standardized test results to teachers and to parents in systematic or controlled ways.

In contrast to these results concerning the institutional procedures of the school and certain activities of parents, the teachers' reports concerning certain direct communication with students showed no differences (after certain controls were applied) between schools of higher and lower counselor-student ratio. Although the teacher's report of his frequency of discussing test results with students was related to the counselor-student ratio of his school when only the one variable was distributed against the other, the relation vanished when the significance test was controlled for the education of the teacher or the number of courses in testing he had taken. The same thing was true for methods of conveying test results to students; the relation between method of conveying test results and the counselor-student ratio was significant when the two variables were considered alone, but the relation lost significance when the education of the teacher was taken into account. Thus, there was some tendency for teachers in the schools of the higher counselor-student ratios to report more frequent discussion of test results with students and to report more regulated methods being used of conveying test results to students; but these practices and perceptions on the part of teachers would have been found to center more closely upon the level of education of the teacher than upon the counselor-student ratio of his school.

The responses from teachers we have examined in this chapter agree well with the responses of students discussed in earlier chapters. I have already mentioned that teachers and students both agreed that teachers and students conversed about test results no more often in schools of high counselor-student ratio than in schools of low (after the analysis was controlled for the educational level of teachers). Similarly, teachers and students both agreed (after controls for curriculum and for frequency of talking with teachers about standardized test results were applied to the responses of students and a control for level of education was applied to the responses of teachers) that regulated methods of conveying test results to students were used no more often in schools of high counselor-student ratio than in schools of low. These results argue that differences in counselor-student ratio are not in themselves sufficient to account for differences in frequency of discussion of test results between students and teachers or in frequency of regulated methods being used to disseminate test results to students. We should remember, nevertheless, that this conclusion was reached after removing from the analysis the effects of other factors on these variables; and the other factors were often factors which varied along with counselor-student ratio. For example, if it was primarily the teachers with relatively more courses in testing who more frequently discussed test results with students, we should remember that the schools with the higher counselor-student ratios had more than their share of the teachers with the more courses in testing. Some of the effectiveness of counselors for which we saw evidence in Chapters IV and V may not have been due directly to the counselors or even indirectly through the influence of counselors on teachers; some of the effect on students may have come partly from the fact that schools which hired relatively more counselors also hired teachers with more training.

The possible complexities in the interrelations of variables also deserve a note. For example, two significant relations do not always imply a third. Although teachers with more education or training tended to discuss test results with students more often than teachers with less education or training (Table XI-22) and teachers with the higher levels of education tended to be found in the schools of higher counselor-student ratio (Table XI-5 and 6), nevertheless the relation between test discussion and counselor-student ratio did not follow suit. The reports of students concerning test discussion were not significantly related to counselor-student ratio (Table III-20); and the reports of teachers concerning test discussion, though showing a significant association to counselor-student ratio (2 df, $P < .001$), were not related to it in a monotonic manner. In like manner, even though we might expect the student who discussed test results with his teachers or counselors to be aware that standardized tests were given in the school, it is no surprise to obtain a result such as that we saw in Table VII-1, which showed that awareness that standardized tests were given was unrelated to counselor-student ratio. The whole matter of paths of influence in the school -- among faculty, among students, and from one group to the other -- needs more penetrating investigation.

We mentioned also another comparison of teacher reports with student reports in this chapter. Teachers in schools of different counselor-student ratios reported different frequencies of discussing test results with parents (Table XI-17); they also reported with different frequencies that the school gave test results to parents in a regulated manner (Table XI-19). These findings are in close accord with the reports of students in schools of different counselor-student ratios on whether and how test results were given to parents (Tables VII-19, 20, 24, 27, and 28).

A domain of teacher opinion not summarized in Table XI-1 was the matter of the best ways to get different kinds of information about students. We found that there were some strong points of agreement among teachers as to what were or were not the best ways to get certain kinds of information. Eighty-six percent of the teachers agreed that checking school records was one of the best ways to get information about performance in school subjects and that asking the student was one of the best ways to get information about aspirations and ambitions. Unsurprisingly, more than 99 percent of the teachers agreed that asking other students or asking other adults were not among the best ways to get information about intelligence (Table XI-24). Other points of strong agreement were these: "observe the student" was chosen as one of the best ways to get information about personality and character by 84 percent of the teachers, to get information about fears and worries by 63 percent, and to get information about esthetic and artistic abilities by 59 percent; "check school records" was chosen as one of the best methods for health information by 71 percent and for intelligence or academic aptitude by 72 percent; "ask the student" was chosen for information about interests by 79 percent of the teachers; and "administer a test" was chosen for intelligence or academic aptitude by 69 percent.

The preferences among methods for getting different kinds of information was not uniform throughout schools of different counselor-student ratios (Table XI-25). Teachers in schools of the higher counselor-student ratios, in comparison with those in schools of the lower ratios, more often chose the already popular method of checking school records; but they were less often confident that the otherwise most popular method, observing the student, was one of the best ways to get various kinds of information about students. The teachers in the high-ratio schools were even more dubious than other teachers about the least popular methods: asking other students and asking other adults. I cited certain findings from the Second Project which seemed to support one of the particular findings here; namely, that teachers in schools of higher counselor-student ratios less frequently mentioned administering a test as one of the best ways to get information about intelligence than did teachers in schools of lower counselor-student ratios.

The special preferences of teachers in schools of high counselor-student ratios for certain methods of getting certain kinds of information, as compared with the teachers in the schools of lower ratios, seemed to bear no systematic relation to the reports of students described in Chapter IX concerning what kinds of information they felt their teachers had about them.

We next looked at the relation of teachers' years in teaching to preferences for certain ways of getting certain kinds of information about students. This variable, too, showed a large proportion of significant relations to certain methods and certain kinds of information (Table XI-26). Impressively, teachers of longer experience tended to have sharper preferences; they chose fewer methods as being among the best methods for obtaining the several kinds of information. Among the 80 pairings of a method with a kind of information, there were 24 cases of a particular method of obtaining a particular kind of information being chosen significantly less often by teachers of longer experience than by teachers of shorter, while there was only one case of a method being chosen as best for a particular kind of information more often by the teachers of longer experience.

Further differences appeared when teachers were divided according to counselor-student ratio of the school (Table XI-35). Among teachers in schools of low counselor-student ratio, there were many instances in which teachers with more years in teaching chose a particular method for a particular kind of information less often than did teachers with fewer years in teaching. This comparative reluctance of the "older" teachers to choose a method as one of the best was especially marked in the case of "ask other teachers" and "administer a test." But among teachers in schools of high counselor-student ratio, the instances of differences between "older" and "younger" teachers were very much fewer and indeed could have been a number not far beyond chance.

In sum, schools with relatively more counselors were typically different in many ways from schools with relatively fewer counselors, judging from the reports of practices and attitudes which we gathered from the teachers. They were different in the information about students which was made available by the school, they were different in respect to the methods used in disseminating the information and in the uses the teachers made of it, they were different in respect to preferred methods of getting different kinds of information about students, and they were even different in respect to the degree that the more experienced teachers differed in their preferences for methods of getting information from the less experienced teachers. Most of these differences between schools of higher and lower counselor-student ratios were in a direction which must have impressed the teachers in the high-ratio schools, relatively speaking, with the bustle and enterprise to be seen in their schools in matters of guidance.

Satisfaction

Guidance counseling is a multiform enterprise, and it has no single goal. Even the nearest of the goals which the guidance counselor envisions lie beyond his term of influence upon the student, and even these goals are cherished in the hope that they will lead in turn to still more distant goals. As this study and others have made clear, it is not easy to ascertain whether such polymorphous and far-ranging goals are at any time being achieved. Perhaps the guidance counselor himself, typically pressed by too many clients, is least in a position to assess in any systematic manner the degree to which he is achieving the goals he values. Yet if he values the goals of guidance, he must get on with his work and continue to use those methods which he believes will bring the results he envisions even though he only rarely, if ever, comes upon good evidence that his efforts are being successful.

Counselors are not alone in this predicament; the teachers and administrators share it. Teachers participate in guidance activity; they must make room for it in their busy schedules and make room for the counselors in the professional life of the school. Administrators must somehow decide upon a proper share of facilities and schedule to be given to guidance work and must make room for the counselors in the budget. Yet teachers and administrators have no more evidence of the validity of their efforts than do counselors. They have less, it seems to me: they must give over to the counselor many of the occasions of satisfaction which come from helping an especially responsive student.

Why do school people continue their efforts at guidance when they are rewarded by such occasional and partial evidence of its effectiveness? Such a question actually opens up the whole field of human motivation. Persistent effort in the face of little or no evidence of success is a phenomenon to be found in many fields of human endeavor. One can, of course, point to the widespread tendency the human has to believe that, if one is working hard with the purpose of achieving a particular goal, one must therefore be approaching that goal, be it ever so slowly. There are many other handy rationalizations in the human repertoire, illogical but comforting -- such as the belief, when a desired outcome occurs, that it has occurred because of one's own efforts to bring it about. But explanations of the rationalizing of persistent effort are only one aspect of a complex question; there are many other subtleties in the matter, and this is not the place for a treatise on human motivation.

I have raised the matter of the commitment of effort to the guidance enterprise in the face of sparse evidence of its effect because this persistence becomes in the school a group phenomenon; consequently, even beyond individual tendencies to perseverance, there may well be certain processes characterizing human groups which to an important extent undergird present commitments, practices, and policies in respect to guidance.

Communication, Attraction, and Perception of Task Success

Where evidence of success at a task is clear and direct, such as in winning a game, building a house, or collecting money for a charity, it is obvious that the actual success in the task can yield directly the perception of task success. Working with people, however, rarely produces unambiguous evidence of effectiveness. The personnel manager, for example, sometimes finds out that he has botched an assignment if the applicant he placed in a job quits or is fired; but he almost never finds out whether an applicant he did not put into a job would have done better than the applicant he did put into it. Counseling work is surely more ambiguous even than this. There are almost no controls against which the counselor can test his methods without violating his own ethics. If the counselor believes that a certain kind of advice is the best advice to give in certain cases, he can hardly, to check his belief, give advice which he thinks is bad advice to people randomly chosen for a control group.

Where evidence of success is ambiguous or indirect, therefore, one typically depends on opinions and judgments from members of a relevant group. In such a situation, consequently, communication must be adequate in amount and one must have confidence in the judgment of those with whom one communicates -- to use the current social-psychological term, he must feel "attracted" to them.

J. E. McGrath (1962), after comparing the outcomes of 250

McGrath, Joseph E. A summary of small group research studies. Fillmore and Wilson Boulevard, Arlington 1, Virginia: Human Sciences Research, Inc., 1962. (AFOSR Document No. 2709, Contract No. AF 49 (638) - 256).

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studies of processes in small groups, summarized the matter as follows:

> The over-all picture suggests that interpersonal attractions, interpersonal communication, and perceptions of task success may vary interdependently, such that a manipulation of any one of them will lead to correlated changes in the other two. Successful induction of greater interpersonal attraction produces greater communication and increased perceptions of group task success. Similarly, successful manipulation of perceptions of group success produces greater interpersonal

> attraction and communication. Finally, it is likely that increasing the amount of communication among group members would lead to more favorable perceptions of other members and of the group's performance effectiveness, although the latter point is not established in the present body of research information. In these terms, we can suggest that attraction, perceived task success and communication constitute an interdependent system of variables. We can further suggest that certain other variables, e.g., cooperative conditions, job autonomy, high member status, are associated with or are determinants of this system.
>
> It is also interesting to note that variables in this complex are related to actual member or group performance for some tasks but not for others. Thus, while this complex of variables may be important for understanding internal relationships within the group, it may be relatively unimportant in determining the effectiveness of members and groups in accomplishment of their tasks.

In other words, where members of a faculty perceive themselves to be making progress toward the goals of guidance, this perception may exist because the goals are actually being approached; granting the difficulty of turning up unambiguous evidence on this matter, however, we may find a faculty perceiving itself to be achieving success in this task because it is working hard at it, communicates a lot about it, and has respect for one another's judgments in the matter. The question facing us is whether one or the other explanation of perception of task success was more often the better explanation among the schools in our study.

We have seen in Chapters IV and V some evidence that guidance efforts were having effects in the schools we studied; that is, responses of students reflected more often certain customary goals of guidance in those schools having relatively easier access to counselors and having teachers relatively more active in respect to guidance. Still, those chapters displayed many attempts to find connections between guidance efforts and criteria of effectiveness which failed. Although our research shows many evidences of the effectiveness of guidance which cannot easily be explained away, they also have presented us with many situations where evidences of effectiveness could just as reasonably be expected but were not found. Furthermore, the fact that counselor-student ratio was associated significantly with the percentage of desirable answers given to certain criterion questionnaire items does not mean that the percentage of students giving the desirable answers was as high as one might wish, even in the schools of high counselor-student ratio. (Percentages of students giving desirable answers to various criterion items were discussed in connection with Tables VI-1 and 2.)

The evidence for the effectiveness of guidance being as spotty as it is, the question arises whether school people are substantially satisfied with present guidance policies and practices and, if so, what circumstances tend to encourage them in their satisfaction. If satisfaction (or perception of task success) exists, one certainly cannot claim that it is produced by clear and direct evidence. The evidence available to the counselor himself is almost always unaccompanied by adequate controls, and the few published research studies which deal with present guidance practices in a representative sample of schools have given only meager encouragement and have left many important questions unanswered.

The question I have raised is whether, if satisfaction with the guidance program existed in the schools of our sample, we can with confidence take this as a report of progress toward the goals of guidance.

Obviously, we must first seek to answer the question whether there is evidence that school people were indeed satisfied with the existing guidance practices and present levels of investment in guidance in their schools. Accordingly, I shall present what evidence was available from the present study concerning satisfaction with guidance services, after which I shall return to McGrath's generalization concerning communication, attraction, and perception of task success.

Satisfaction with Guidance Services

One way to get a picture of what people will settle for is to compare typical demands with maximum demands since almost everyone (perhaps particularly among school people!) evaluates his own status in part by comparing it with the average. The mean number of students per counselor in Illinois high schools estimated from our sample was 442 (see Table III-2); according to Michelman's sample, it was 415 (Table III-3). In a few schools, the number of students per counselor was less than a quarter of these figures. Looking back at our Table III-2, a few cases are seen there to stand out beyond the top edge of the main body of tallies; these stand-out cases represent the schools with the fewest students per counselor. Seven schools contained fewer than 110 students per counselor; of these, four contained fewer than 100, and one of these latter was a school with one counselor (no doubt part time) but only 17 students.* A widely recommended figure for an acceptable number of students per counselor is 300. This is about the point at which we began to put schools into our classification of "high" counselor-student ratio. As I mentioned in Chapter VI (see also Table III-1), about a third of the schools in which we studied students contained fewer than 300 students per counselor, and only about a tenth contained fewer than 200 students per counselor. In the state as a whole, the school was very rare indeed which contained as few as a 100 students per counselor (four, to be exact, out of 510).

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*The actual counts and resulting students-per-counselor ratios for these seven schools are as follows:

(1) 108 stud./1 coun. = 108
(2) 210/2 = 105
(3) 103/1 = 103
(4) 96/1 = 96
(5) 370/4 = 93
(6) 258/3 = 86
(7) 17/1 = 17

Did faculties typically feel fairly satisfied if their schools contained 300 or fewer students per counselor? This is, of course, a difficult question at which to guess. Going on the supposition that they were affected by comparing themselves with the average, however, and noting that nine-tenths of Illinois schools contained more than 200 students per counselor, one might guess that satisfaction began to set in between 300 (the widely known "standard" figure) and perhaps 200 students per counselor. We might risk the guess, it seems to me, that the faculties of the schools we designated as having "high" counselor-student ratios were in general not ashamed of their investment in their guidance staff and here and there were even proud. This opinion rests, too, on the personal conversations we had while carrying out the Second Project, when we visited a number of schools with "high" counselor-student ratios and talked with their faculties.

Unfortunately, we did not in any of our projects ask the teachers directly what satisfaction they took in the guidance efforts their schools were making. However, certain items in the teacher's questionnaire will enable us to draw some reasonable inferences concerning satisfaction with some aspects of the guidance program. The strategy in some instances was to ask a direct question; in others, the strategy was to ask the teacher what was being done in the school, then what he though ought to be done, and then to compare the two answers, interpreting the result to indicate satisfaction if what the teacher thought ought to be done was no different from what he said was being done.

Information in School Files

Principals and teachers were asked (Item 9, Appendix II-B), "Practially all schools keep some kind of cumulative records on their students which are available to teachers. Do you feel that the information which your school obtains and files about students is sufficient?" The responses of principals to this question were significantly associated with the counselor-student ratio of the school, as can be seen from Table XI-36.* The responses of teachers to the question were significantly associated both with counselor-student ratio and with size of school. These results are shown in Table XI-37.*

In Item 10 of the questionnaire, the teacher was given a list of ten kinds of information;* he was asked to check which of these kinds

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*Principals' opinions on the sufficiency of the school files were not significantly associated with size of school when controlled for counselor-student ratio (5 df).

*The relation of teachers' opinions on the sufficiency of the school files was significantly related to counselor-student ratio when controlled on size of school (5 df, $P < .001$) and significantly related to size of school when controlled on counselor-student ratio (5 df, $P < .001$).

Table XI-36. Satisfaction: Percentages of Principals of Schools of Indicated Counselor-Student Ratios Who Said that the Information Which the School Obtained and Filed About Students Was and Was Not Sufficient, Shown Separately by Size of School.

Counselor-student ratio	Whether information sufficient					
	No	Yes	Total	N	Chi-square	
Principals of schools of 600 to 5499 enrollment						
.00323 - .05882	22	78	100	37		
.00168 - .00322	25	75	100	61		
Zero - .00167	47	53	100	59		
	32	68	100	157	10.12	P < .01
Principals of schools of 200 to 599 enrollment						
.00323 - .05882	33	67	100	33		
.00168 - .00322	30	70	100	46		
Zero - .00167	52	48	100	91		
	42	58	100	170	7.06	P < .033
Principals of schools of 17 to 199 enrollment						
.00323 - .05882	35	65	100	40		
Zero - .00167	49	51	100	138		
	46	54	100	178	2.00	NS
		5 df, total chi-square			19.18	P < .005

Table XI-37. Satisfaction: Percentages of Teachers in Crossed Categories of School Size and Counselor-Student Ratio Who Said that the Information Which the School Obtained and Filed About Students Was and Was Not Sufficient.

Enrollment	Counselor-student ratio	Whether information sufficient: No	Yes	Total	N
600 - 5499	.00323 - .05882	13	87	100	245
600 - 5499	.00168 - .00322	23	77	100	413
600 - 5499	Zero - .00167	28	72	100	292
200 - 599	.00323 - .05882	29	71	100	133
200 - 599	.00168 - .00322	37	63	100	207
200 - 599	Zero - .00167	47	53	100	401
17 - 199	.00323 - .05882	38	62	100	164
17 - 199	Zero - .00167	43	57	100	579
		34	66	100	2434

7 df, chi-square = 129.54, $P < .001$

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*Performance in school subjects, family and home life, nonacademic skills and abilities, intelligence and academic aptitude, fears and worries, esthetic and artistic abilities, aspirations and ambitions, interests, personality and character, and health.

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could be found in the school files and also which kinds he felt it to be "of primary importance for a teacher to have for _every_ student in order to do an effective job of teaching, regardless of whether this information is in your school's files." For each teacher we then counted the number of kinds of information which he said it was important to have but which at the same time he said were not presently available in the school files. This would give us at least a rough index, we felt, of the extent to which the teacher believed available information to be inadequate -- in other words, an index of his dissatisfaction with the information the school provided in the files.

In comparing the excess kinds of information the teacher felt desirable over the kinds available with counselor-student ratio or enrollment of school, it was of course necessary to apply a control for the number of kinds of information the teacher said were presently available since the more kinds he checked as available, the fewer kinds would remain for him to say were desirable but not available. The complete analysis including the detailed percentages in the several categories of control is not shown here, but can be seen in Appendix XI-G. For purposes of brevity and ease of inspection, the original analysis is shown below in condensed form; Table XI-38 overlays, so to speak, the percentages occurring in the several control sections of the original analysis. That is, the percentages shown in the separate

Table XI-38. Satisfaction: Percentages of Teachers in Schools of Indicated Enrollments Who Named Indicated Number of Kinds of Information as Desirable but Not Available in School Files, Shown Separately by Counselor-Student Ratio of School.

	Number of kinds of information desirable but not in files*					
Enrollment	Some	Few	None or here and there one or two	Total	N	Chi-square
	Couns.-stud. ratio .00323 to .05882					
600 - 5499	26	37	37	100	204	
17 - 599	49	35	16	100	270	
	39	36	25	100	474	34.63** 10 df P < .001
	Couns.-stud. ratio .00168 to .00322					
600 - 5499	33	37	30	100	348	
200 - 599	45	37	18	100	182	
	37	37	26	100	530	24.98** 6 df P < .001
	Couns.-stud. ratio zero to .00167					
600 - 5499	42	34	24	100	255	
17 - 599	50	38	12	100	907	
	48	37	15	100	1162	29.65** 10 df P < .001
			26 df, total chi-square			89.26 P < .001

* Actual numbers are shown in Appendix XI-G.

** Computed as shown in Appendix XI-G.

sections of the tabulation in Appendix XI-G are pooled in Table XI-38 and the specification of the control levels is omitted; hence the rather vague column headings in Table XI-38. The column headings in Table XI-38 read from more kinds of desirable information not available at the left to fewer kinds at the right, so that responses indicating more satisfaction are toward the right side of the tabulation. Satisfaction with the number of kinds of information available in the school files was not significantly related to counselor-student ratio when controlled on size of school (28 df), but it was related to size of school, as Table XI-38 shows. Also, satisfaction with the available information was significantly related to counselor-student ratio when no controls at all were applied (4 df, $P < .001$). In brief, teachers in the schools higher in our customary classifications tended to be more satisfied with the kinds of information available in the school files -- that is, they tended to feel that fewer kinds of information needed to be added to the files than did teachers in schools lower in our classifications.

Kinds of Tests Being Administered

Item 17 of the teacher's questionnaire asked the teacher to check which of six different kinds of tests* were at present being administered in the school and then to check which kinds, in his opinion, ought to be administered. The excess of those kinds of tests the teacher said ought to be administered over the kinds already being administered was taken as an index of dissatisfaction with one aspect of the testing program. Here again, it was necessary in analysis first to divide the teachers into groups according to the number of kinds of tests they said already were being administered. This was necessary in order that the numbers they said ought to be but were not then being administered would not be too much affected by the number out of the six kinds that were left after they had checked the kinds already being administered. The analysis showing in detail the control for number of kinds of tests reported already being administered is shown in Appendix XI-H. Table XI-39 below shows the pattern which results when the frequencies of responses are pooled across the sub-analyses in Appendix XI-H -- across the subanalyses, that is, which were established according to the number of kinds of tests already being administered. Again, the left-hand column in Table XI-39 labels the less satisfied responses and the right-hand column the more satisfied responses. Overall, it can be seen in Table XI-39 that teachers in the schools of higher counselor-student ratios were more often satisfied with the number of kinds of tests being administered than were teachers in schools of lower ratios.

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*Intelligence, academic aptitude (college preparatory), achievement in subject fields, achievement in reading, interests, and personality.

Information Seeking by Teachers

Finally, we might ask whether teachers in our several classifications of schools showed different degrees of satisfaction with the amount of time they spent seeking information about students. As well as asking teachers how often they took time to gather information about students, we also asked them (Item 15, Appendix II-B), "How much time do you think you ought to spend in gathering information about students?"

Table XI-39. Satisfaction: Percentages of Teachers in Schools of Indicated Counselor-Student Ratios Who Named Indicated Number of Kinds of Test which Were Not Being Administered in the School but Ought to Have Been, Shown Separately by Size of School.

	Number of kinds of tests not administered but ought to be*				
Counselor-student ratio	More	None or here and there one or two	Total	N	Chi-square
Teachers in schools of 600 to 5499 enrollment					
.00323 - .05882	56	44	100	198	
.00168 - .00322	56	44	100	349	
Zero - .00167	63	37	100	262	
	58	42	100	809	5.31** NS
Teachers in schools of 200 to 599 enrollment					
.00323 - .05882	59	41	100	128	
.00168 - .00322	62	38	100	182	
Zero - .00167	71	29	100	363	
	66	34	100	673	13.14** P < .02
Teachers in schools of 17 to 199 enrollment					
.00323 - .05882	63	37	100	152	
Zero - .00167	69	31	100	532	
	67	33	100	684	2.57** NS
			10 df, total chi-square		21.02 P < .022

* Actual numbers are shown in Appendix XI-H.

** Computed as shown in Appendix XI-H.

Comparing the answers to the two questions gave us an index of the additional time they felt they ought to spend beyond that which they already spent. We saw in Table XI-8 that the amount of time spent seeking information tended to be greater in the higher classifications of enrollment and counselor-student ratio and lesser in the lower classifications. This was not true, however, of the reports of additional time which ought to be spent. When additional time which ought to be spent was distributed against crossed categories of enrollment and counselor-student ratio, with time presently spent controlled (14 df), the result was not significant. While teachers in schools of larger enrollments or higher counselor-student ratios tended to spend more time seeking information than teachers in schools in the lower classifications, teachers were about equally satisfied with the amount of time they spent in schools throughout our classifications.

Recapitulation

Comparing schools in the higher classifications of enrollment or counselor-student ratio with those in the lower classifications, we have seen in this section evidence that (1) principals and (2) teachers in the higher classifications more often believed the information available in the school files to be sufficient (Tables XI-36 and 37); (3) teachers were more often satisfied with the number of kinds of information available in the school files (Table XI-38); (4) teachers were more often satisfied with the number of kinds of tests being administered in the school (Table XI-39); and (5) that teachers in the schools of the higher classifications were no more often dissatisfied with the time they spent seeking information about students than were teachers in the schools of the lower classifications. At the beginning of the section, I also gave some reasons (which necessitated some guesswork) for believing that faculties might feel their counseling staffs to be adequate if the ratios ran to fewer than 300 students per counselor.

These bits of evidence certainly cannot permit us to claim that a uniform complacency about guidance services pervaded the schools of "high" counselor-student ratios in Illinois in 1959. Such a sweeping claim is ruled out not only by the scantiness of the possible kinds of satisfaction we have sampled but also by the percentages of those we have called "satisfied." The percentages of "satisfied" responses in the highest and lowest classifications of enrollment and counselor-student ratio which we have seen displayed in Tables XI-36 through 39 and recapitulated in Table XI-40. Granting these reservations, it is nevertheless persuasive that, in looking at five questionnaire items which could bear upon the question of satisfaction, four of them showed significant differences among schools in the different classifications, with the higher incidence of satisfaction occurring in those schools where counselors were likely to have been relatively more numerous. This can be seen at a glance in Table XI-40. It would seem overcautious to conclude from these results merely that faculties in schools with relatively more counselors were no less dissatisfied than faculties in schools with relatively fewer. While being ready for future research to modify the picture, let us in the meantime proceed on the assumption -- until further research is carried out -- that schools of the higher counselor-student ratios tended to be somewhat more satisfied with their guidance services than schools of the lower ratios.

Table XI-40. Summary of Findings on Satisfaction: Percentages of Respondents in Schools of High Counselor-Student Ratio (and/or of Large Size) and in Schools of Low Counselor-Student Ratio (and/or of Small Size) Who Gave Indicated Types of Responses.

Type of response	Low couns.-stud. ratio (and/or small school size)	High couns.-stud. ratio (and/or large school size)	See table
Principals saying that information in school files was sufficient	51 %	78 %	XI-36
Teachers saying that information in school files was sufficient	57	87	XI-37
Teachers saying that almost no more kinds of information were needed in school files	12	37	XI-38
Teachers saying that almost no more kinds of test needed to be administered	31	44	XI-39

Communication, Attraction, and Perception of Task Success Continued

We have seen some evidence in this book that schools of the higher counselor-students ratios were achieving more success in their guidance efforts -- at least in certain respects -- than were schools of lower counselor-student ratios. This actual difference in success could account for some of the difference in satisfaction we have seen. On the other hand, evidence of differences in guidance effectiveness did not appear everywhere we looked and they must surely have been even less noticeable to the faculties themselves, who did not have comparative data such as we have marshaled here. Taking it as true that there were differences in satisfaction, the higher satisfaction in the schools of the higher counselor-student ratios must have been supported by some processes beyond the simple one of observing direct evidence of task success.

Turning back now to the hypothesis connecting communication, attraction, and perception of task success for which McGrath (1962) found evidence in the 250 studies he examined, the question arises whether the schools of the higher counselor-student ratios in our study might have been characterized by higher levels of communication and attraction than the schools of lower counselor-student ratios. Again, the evidence available from our research is none too fulsome, but it is suggestive.

To begin with evidences for differences in communication, we can recall that Tables XI-8 and 9 displayed responses of teachers and principals indicating that teachers spent more time seeking information about students in the schools of the higher classifications of enrollment and counselor-student ratio than did teachers in the lower classifications. One way to find information about students, of course, is to look in the school files. Nevertheless, Table XI-24 and 25 (along with Appendix XI-C) showed us that other methods were often preferred to checking school records. Many of the other methods were methods of communicating with school personnel -- teachers and students. In any case, even if information were sometimes gathered by a method not requiring direct communication with another member of the school, it seems likely that obtaining the information would tend to be followed by communication with others about it. In brief, Tables XI-8 and 9 suggest that faculties in schools of higher counselor-student ratios exhibited larger amounts of communication with other teachers, with students, or with both than did teachers in schools of lower counselor-student ratios.

We can also look at the methods which teachers preferred for obtaining various kinds of information. We shall be interested particularly in those methods which require direct communication with other members of the school; namely, teachers and students. We might also consider methods involving parents since parents are very closely connected to the school, and communication to them and from them can be considered a kind of indirect path -- but a path nevertheless -- for communication to take from one member of the school to another. Table XI-41 recapitulates the differences between schools of high counselor-student ratio and those of low in the cases where the relation was significant between counselor-student ratio and the percentage of teachers preferring a certain method for obtaining a certain kind of information. Table XI-41 includes only those cases involving the

Table XI-41. Percentages of Teachers in Schools of Low and High Counselor-Student Ratios Who Chose Methods of Communication with Persons Closely Connected with the School as Methods of Obtaining Indicated Kinds of Information About Students.

Method chosen for obtaining indicated kind of information	Counselor-student ratio Low	Counselor-student ratio High	See table
Ask other teachers about fears and worries	23 %	26 %	XI-C-4
Ask other teachers about family and home life	24	23	XI-C-23
Ask the student about non-academic skills and abilities	38	43	XI-C-18
Ask the student about family and home life	39	42	XI-C-21
Ask other students about esthetic and artistic abilities	12	9	XI-C-8
Ask parents about esthetic and artistic abilities	19	27	XI-C-7
Ask parents about family and home life	49	52	XI-C-22
Mean percentages	29.1	31.7	
Mean percentages omitting method of asking parents	27.2	28.6	

methods of asking other teachers, asking students, or asking parents. Even omitting the method of asking parents, it can be seen that, on the average, teachers in schools of high counselor-student ratios chose these directly communicative methods somewhat more often than did teachers in schools of low ratios.

These are the only items we have available which seemed to permit reasonable inferences about communication concerning guidance, but the responses to them in the schools of different counselor-student ratios support our expectation, even if very tentatively, that communication about guidance matters was more frequent in schools of higher counselor-student ratio than in schools of low.

Concerning attraction, we obtained no useful measure of this variable from the First Project. However, if communication was higher in some classifications of schools than in others, we should expect, following McGrath's generalization, that attraction would be higher also. Fortunately, the Second Project provided us with data to support this expectation.* Furthermore, 24 of the 28 schools in the Second Project were schools which had also been studied in the First Project six months earlier. Consequently, a relation between communication and attraction found in the schools of the Second Project will not have been far removed, either in space or time, from what we should expect to have found in the schools of the First Project.

---

*Unfortunately, however, the range of counselor-student ratios and the number of schools did not encourage essaying a direct test of the complete McGrath hypothesis upon the schools of the Second Project.

The method of assessing communication in the Second Project was briefly described in Chapter VI. Briefly, again, pairs of persons who discussed matters of guidance or testing with each other at least once a week were called "connected" and persons who discussed these matters less than once a week were called "unconnected." We also asked each member of each faculty, "Please write here the names of members of your school staff whose judgment about counseling or testing you highly respect." We then compared frequency of communication about guidance and testing with frequency of indication of respect in this same field, making the prediction that the two would go together. We found that where density of communication connections was high, mean respect choices tended to be high and vice versa ($P < .001$). For details of procedure and analysis, see Hastings, Runkel, and Damrin (1961) or Runkel (1962).

Runkel, Philip J. A replicated test of the attraction-communication hypothesis in a setting of technical information flow. American Sociological Review, 1962, 27, 402-408.

My chain of reasoning has been as follows. McGrath said that communication, attraction, and perception of task success tend to go together; that where one is high, the others tend to be high. I pointed to evidence -- not direct or thorough, it is true, but suggestive -- that satisfaction (perception of task success) tended to be higher where counselor-student ratio was higher, that communication was higher, and, in a scattered sample of these schools studied in the Second Project, that communication was positively related to attraction (respect). Whatever the deficiencies of the several portions of the data, these results all hang together as McGrath said they should if the communication-attraction-satisfaction complex of variables were operating in our sample schools. It would be surprising if this complex of variables were not operating since school faculties tend to exhibit small group properties and since guidance in schools can easily be looked upon as a group task.

In brief, delicate though our evidence may be, it points up the question of the source of satisfaction with existing guidance policies and procedures. If an administrator or counselor claims success for his guidance program, it is possible that he can produce unbiased and properly controlled evidence that this is the case. Where he cannot produce such evidence, it is possible that his confidence in his efforts is being supported by his commitment to his efforts and by a communication-attraction-satisfaction cycle in the school. To put this another way, direct operating experience with a guidance program (or even with dozens of them) is a poor source of information for assessing the efficacy of guidance in any larger population of schools and is probably a poor source for assessing the efficacy of the guidance programs in the observed schools themselves. What is needed is an objective assessment with proper controls, and this is probably best done by persons from outside the school.

In speaking of the necessity for proper controls in drawing conclusions from empirical observations, I certainly do not suggest that the present study should be used as a model of studies of counseling effectiveness. The present study has all the weaknesses of correlational studies and of exploratory studies laid out with little theoretical thinking during the planning. Although our study has demonstrated that reasonable evidence can be found for the effectiveness of guidance as it is now being carried on in a large population of schools, no one concerned about the future of guidance work should take our results to mean that the question of effectiveness is settled. Much more careful and comprehensive research than this needs to be done, using more carefully constructed measures, covering more of the relevant domain, and including controls permitting direct inferences about causation.

Summary

One lesson of chief importance stands out, it seems to me, from the findings of this chapter. It is that the schools of higher counselor-student ratios differed sharply in many ways from the schools of lower ratios. (The summary tables are Tables XI-1, 25, 26, and 40.) This is important because it makes clear what, after all, we should have expected: that schools with relatively more counselors are not merely that. They are different kinds of schools from schools with fewer counselors.

The general picture was that the schools high in counselor-student ratio (and/or of large size) were, in comparison with other schools, more visibly active in guidance matters. The schools in our higher classifications provided more kinds of information in the school files, administered more kinds of tests, and were carrying out more changes in their guidance programs. The teachers more frequently sought information about their students. More of these schools gave test results to parents than did schools of lower counselor-student ratios (and/or of small size), and teachers in these schools more frequently discussed test results with parents. These schools took more trouble to convey standardized test results to teachers and to parents in systematic or controlled ways.

Preferences among methods for getting different kinds of information were not uniform throughout schools of different counselor-student ratios. Teachers in schools of the higher counselor-student ratios, in comparison with those in schools of the lower ratios, even more frequently preferred the most popular method of getting information about students: that of checking school records. However, they were less often confident that the otherwise most popular method, observing the student, was one of the best. They were even more dubious than other teachers about the least popular methods: asking other students and asking other adults. One particular finding was that teachers in schools of higher counselor-student ratios less frequently mentioned administering a test as one of the best ways to get information about intelligence than did teachers in schools of lower counselor-student ratios.

Among teachers in schools of low counselor-student ratio, there were many instances of a particular method for obtaining a particular kind of information being chosen less often by teachers with more years in teaching than by teachers with fewer years in teaching. This comparative reluctance of the "older" teachers to choose a method as one of the best was especially marked in the case of "ask other teachers" and "administer a test." But among teachers in schools of high counselor-student ratio, the instances of differences between "older" and "younger" teachers were very much fewer.

In sum, schools with relatively more counselors were typically different in many ways from schools with relatively fewer counselors. They were different in the information about students which was made available by the school, they were different in respect to the methods used in disseminating the information and in the uses the teachers made of it, they were different in respect to preferred methods of getting different kinds of information about students, and they were even different in respect to the degree that the more experienced teachers differed in their preferences for methods of getting information from the less experienced teachers. Most of these differences between schools of higher and lower counselor-student ratios were in a direction which must have impressed the teachers in the high-ratio schools, relatively speaking, with the bustle and enterprise to be seen in their schools in matters of guidance.

The differences summarized above are admittedly not systematically representative of the aspects or characteristics of schools and faculties which it is possible to examine. Furthermore, these differences are surely more often than not superficial and phenotypic rather than causal and genotypic. Subsequent studies should be more penetrating; they should make use of theory about group processes, information transmission, and role performance as a guide to planning. Some suggestions in this direction were given in Chapter VI and elsewhere. The important point here, however, is that it is a worthwhile venture to seek differences between schools of high and low counselor-student ratios. The frequency with which we found differences when we looked for them and the sizes of many of the differences surely encourage the claim that further research is justified into the question of the underlying ways in which a school active in guidance differs from one less active. The question of what distinguishes a school which is effective from one which is less effective is a further question, but both questions are important. This study has not reached adequate answers to either question; but it has, I hope, given some useful suggestions for further research.

A second point was made in this chapter which, though not as well documented as the fact of differences between schools in our several classifications, could turn out to be important in further investigations. This point was the one about the possible sources of satisfaction, or perception of task success, concerning the guidance program of the school.

In opening the question of the possible origins of the perception on the part of the school faculty as to success in the task of guidance, I cited McGrath's (1962) statement that communication, attraction, and perception of task success tend to go together; that where one is high, the others tend to be high. I pointed to suggestive evidence in our data that satisfaction (perception of task success) tended to be higher where counselor-student ratio was higher, that communication was higher, and, in a scattered sample of these same schools studied in the Second Project, that communication with another person about guidance and testing was positively related to respect for the competence of the other in these matters--respect here being a form of attraction. Whatever the deficiencies of the several portions of the data, these results hung together as McGrath said they should, if the communication-attraction-satisfaction complex of variables was operating in our sample schools.

These results suggested that if an administrator or counselor should wish to claim success for his guidance program, he should ask himself whether he can produce unbiased and properly controlled evidence that this is the case, or whether, on the other hand, it is possible that his confidence in his efforts is being supported by his commitment to his efforts and by a communication-attraction-satisfaction cycle in the school. What is needed for a confident conclusion is an objective assessment with proper controls.

CHAPTER XII

THE IMPORTANCE OF TEACHERS: WITH SOME FURTHER SOCIAL-PSYCHOLOGICAL NOTES

(to be written)

CHAPTER XIII

POLICY AND RESEARCH

(to be written)

APPENDIX II-A

Students' Questionnaire

II-A-2

Student Information Study

QUESTIONNAIRE FOR STUDENTS

Your principal is permitting you to receive
this questionnaire through the school office.

All of your answers will be kept completely confidential.

		Please do not write in this margin
Name: ____________________	Sex: M___ F___	
School: ____________________	Date: __________	

1. Place an X after the course of study you are taking:

College preparatory	___ 0	
Business or commercial	___ 1	9
Vocational (Agriculture, shop, industrial arts, home economics, etc.)	___ 2	

2. Were you a student in this school last year?	Yes ___ 1 No ___ 0	10-11

> If you are not sure of the answers to some of the questions, do not take time to look them up or ask other students. Just make the best guess you can and go on to the next question.

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Champaign, Illinois

Please do not write in this margin

3. Below is a list of things your teachers could know about you as a person. Please do four things, in turn.

First: Place an X in Column 1 after each thing that practically all of your teachers know about you. DO THIS NOW.

Second: Now place an X in Column 2 after each thing that only a few of your teachers know about you.

Third: Next, place an X in Column 3 after each thing that none of your teachers know about you.

Fourth: Finally, place an X in Column 4 after each thing you think your teachers ought to know about you, regardless of whether they do now.

	Column 1 All of my teachers know this	Column 2 Only a few of my teachers know this	Column 3 None of my teachers know this	Column 4 ? My teachers ought to know this	
Performance in school subjects					/0/
Family and home life					/1/
Non-academic skills and abilities					/2/
Intelligence and academic ability					/3/
Fears and worries					/4/
Aesthetic and artistic abilities					/5/
Aspirations and ambitions					/6/
Interests					/7/
Personality and character					/8/
Health					/9/
	(12)	(13)	(14)	(15)	

Please do not write in this margin

4. Below are some ways a teacher could use to find out about the things in the list on the opposite page. Please do two things.

First: Place an X in Column 1 after those ways you think are best for a teacher to use.

Second: Place an X in Column 2 after those ways you think are very poor for a teacher to use.

Ways of finding out about students	Column 1 Best ways	Column 2 Very poor ways	
Watch the student to see what he does			16
Ask the student			17
Ask other students			18
Ask other teachers			19
Ask the student's parents			20
Ask other adults who know the student			21
Give the student a test			22
Look up the student's school records			23
	2	1	

(Use this space if you care to comment on this.)____________________

____

____

5. Do you think that your teachers spend as much time as they ought to spend in getting to know their students?

Yes __ 1 No __ 0 24

6. Does your school give the tests of the Illinois Statewide High School Testing Program?

Yes __ 1 No __ 0 Uncertain __ 2 25

7. Does your school give any standardized tests to students? (A standardized test is one that is made up by persons outside the school, that comes in a printed booklet, and is usually given to all students.)

Yes __ 1 No __ 0 Uncertain __ 2 26

Please do not write in this margin

8. Does your school give the results of any tests like these to your parents? That is, do they ever tell your parents how you did?

Yes___ No___ Uncertain___
0 2

If yes, how does the school do this?______________________ 27☐

____

____

9. Does your school give the results of any tests like these to you?

Yes___ No___ 28☐
0

If yes, how is this done?______________________

____

____

10. What occupations have you thought of as your possible life work?

First choice:______________________ 29☐

Second choice:______________________ 30☐

11. What led you to consider the type of work you listed as your first choice?

____ 31☐

____ 32☐

____

12. How much education is required for this type of work?

____ 33☐

____ 34☐

13. What does a person in this type of work actually do?

____ 35☐

____ 36☐

____

Please do not write in this margin

14. What abilities and skills must a person have who engages in this type of work?

____

____ 37☐

____ 38☐

15. Do you have the necessary skills and abilities for this type of work?

Yes___ No___
1

39☐

If your answer is no, what ones do you lack?____________________

____

____

16. How, or from whom, did you find out the information you have given in answer to Questions 12, 13, 14, and 15?

____ 40☐

____ 41☐

____

17. When you want to talk over your plans and problems with someone, to whom do you usually go?

42☐

____ 43☐

____

18. Is there anyone in school with whom you talk over your plans and problems?

Yes___ No___
0

44☐

If yes, who? Name:______________________________ 45☐

Anyone else? Name:______________________________

Please do not write in this margin

19. Does your school have a guidance counselor or dean especially given the job of talking with students about their plans and problems?

Yes ___ 1 No ___ 0 Uncertain ___ 2 46

If yes, have you ever gone to this counselor to talk over your plans and problems?

Yes ___ 1 No ___ 0 47

How many of the other students go to this person to talk over their plans and problems? (Even if you are not sure, please give your best guess.)

Almost all ___ 3 Less than half ___ 1 48
More than half ___ 2 Almost none ___ 0

20. When discussing your future plans with teachers or with a counselor, do they ever mention the scores you made on standardized tests?

Frequently ___ 3 Rarely ___ 1 49
Sometimes ___ 2 Never ___ 0

21. Where did you fill out this questionnaire?

In study hall ___ 0 50 ☐

Some other place (specify) ______________________________

Please do not talk about these questions
with someone else who has received a questionnaire
until after that person has filled it out.

Put this questionnaire in the attached envelope and seal it. Take it back to the school office to be placed in the mail. If you did not fill out the questionnaire in school, then you may either mail it yourself or return it to the school office for mailing.

In any event, see that it gets in the mail without delay.

A preliminary report on this study will probably be ready in August or September. If you would like us to send you a copy, please write below your name and the address to which you would like it sent.

____
____
____

THANK YOU FOR YOUR HELP

APPENDIX II-B

Teachers' Questionnaire

II-B-2

Student Information Study

QUESTIONNAIRE FOR TEACHERS

Your principal is permitting you
to receive this questionnaire through
the school office. Please read the
introductory paragraphs NOW.

Please do not write in this margin

This questionnaire is an important part of a statewide study of current school practices as viewed by principals, guidance counselors, teachers, and students. We are conducting this study under a research contract with the United States Office of Education.

Your school is one of those in the State of Illinois which has been selected to participate in this study--and you have been selected as one of the few who are to represent your school. It is of great importance that we receive this questionnaire from you promptly. We hope you can mail it to us within the next two days.

Almost everyone completes this questionnaire in well under an hour. Please return it to us as soon as you have filled it out in the self-addressed and stamped envelope attached. We are employing this somewhat expensive procedure to insure that your responses will be kept completely confidential.

Name: ____________________ Sex: M___ F___

School: ____________________ Date: __________

1. How many classes do you teach per day? ______ 13 ☐
2. What is the average number of students per class (approx.)? ______ 14-15
3. What subjects do you teach? ____________________ 16 ☐
   ____________________ 17 ☐
4. How long have you been a teacher? ______ years 18-19
5. How long have you been at this school? ______ years 20-21
6. What is the highest degree you hold? ______ 22 ☐
7. In what year did you obtain this degree? ______ 23-24
8. How many semester hours do you have toward your next degree? ______ 25-26

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Champaign, Illinois

Please do not write in this margin

To make answering easy, we have put as many of these questions as possible into multiple-choice and yes-no form. However, please feel free to write in comments wherever you think necessary. If you are not sure of the answers to some of the questions, please do not take time to look them up or consult with others. Merely give us your best guess and go on to the next question.

ALL OF YOUR RESPONSES WILL BE KEPT COMPLETELY CONFIDENTIAL

9. Practically all schools keep some kind of cumulative records on their students which are available to teachers. Do you feel that the information which your school obtains and files about students is sufficient?

Yes ___ 1 No ___ 0 27

(Use this space if you care to comment.) ______________________ 28

____

____

10. On the opposite page is a list of several kinds of information a teacher could obtain about his students, either from school files or on his own. Please do three things.

First: Place an X in Column 1 after each type of information that can be found in your school's files.

Second: Keeping in mind a teacher's daily load, place an X in Column 2 after each type of information you feel is of primary importance for a teacher to have for every student in order to do an effective job of teaching, regardless of whether this information is in your school's files.

Third: Now assume that the schedule could be arranged so that you had an additional free period each week. Place an X in Column 3 after whatever further kinds of information--if any--you would spend part of this time to obtain. Do not mark more than three.

Kind of Information	Column 1 In School Files	Column 2 Should Have	Column 3 Desirable Additions	Please do not write in this margin
Performance in school subjects				0
Family and home life				1
Non-academic skills and abilities				2
Intelligence and academic aptitude				3
Fears and worries				4
Aesthetic and artistic abilities				5
Aspirations and ambitions				6
Interests				7
Personality and character				8
Health				9
Other (specify)				y
	(29)	(30)	(31)	

11. Suppose you wanted to obtain information about the things in the list on the preceding page. For each kind of information, place an X to indicate the way or ways you think are best for obtaining it.

Please do not write in this margin

Kind of Information	Observe the student	Ask the student	Ask other students	Ask other teachers	Ask the parents	Ask other adults	Administer a test	Check school records	
Performance in school subjects									/0/
Family and home life									/1/
Non-academic skills and abilities									/2/
Intelligence and academic aptitude									/3/
Fears and worries									/4/
Aesthetic and artistic abilities									/5/
Aspirations and ambitions									/6/
Interests									/7/
Personality and character									/8/
Health									/9/
	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	

12. Take the one column in which you have placed the largest number of marks. Why do you feel that this method is more valuable than the others?

____ 40/ /

____

____

13. Take the column in which you have placed the second largest number of marks. Why do you feel that this method is more valuable than the others?

____ 41/ /

____

____

Please do not write in this margin

14. Apart from the actual time you spend in the classroom, about how often do you take time out to gather information about students? (For example, looking up records, conferring with parents, consulting with the guidance counselor, etc.)

Approximately one hour per semester ___ 0 42
Approximately one hour per month ___ 1
Approximately one hour per week ___ 2
More than one hour per week ___ 3

15. How much time do you think you ought to spend in gathering information about students?

Approximately one hour per semester ___ 0 43
Approximately one hour per month ___ 1
Approximately one hour per week ___ 2 ---4
More than one hour per week ___ 3

16. Within the past two years, has your school made any innovations or changes in its testing program, its guidance program, or its counseling services?

Yes ___ No ___ 48/ /
0

If yes, please describe: ______________________________

____

____

17. Below is a list of six different kinds of tests. Please do two things.

First: Place an X in Column 1 if this kind of test is administered in your school.

Second: Place an X in Column 2 if you think this kind of test ought to be administered in your school, regardless of whether it presently is.

Kind of Test	Column 1: Is now administered	Column 2: Ought to be administered	
Intelligence			/0/
Academic aptitude (college preparatory)			/1/
Achievement in subject fields			/2/
Achievement in reading			/3/
Interest			/4/
Personality			/5/
	(49)	(50)	

Please do not write in this margin

18. About how many of the other teachers in the school do you think would check Column 2 the way you did?

Almost all ___ 3
More than half ___ 2
Less than half ___ 1
Almost none ___ 0

51

19. Would the administration check Column 2 the way you did?

Yes ___ 1 No ___ 0

52 ☐

(Use this space if you care to comment.) ______________________________

____

____

20. Does your school participate in the Illinois Statewide High School Testing Program?

Yes ___ 1 No ___ 0 Uncertain ___ 2

53

21. How do you and the other teachers find out what test scores students made, once the scores are reported to the school?

____

____

____

54 ☐

22. About how many teachers in your school would you say make it a point to look up the test scores of students?

Almost all ___ 3
More than half ___ 2
Less than half ___ 1
Almost none ___ 0

55

Please do not write in this margin

23-26. Here are three commonly held attitudes regarding a student's test scores:

A. A test score is a valuable piece of information which answers many of the questions I have about my students.

B. A test score is a valuable piece of information useful in raising important questions in my mind about my students.

C. A test score is an interesting piece of technical information but possesses little or no value for the on-going activities of the classroom.

23. How many of the teachers in your school would you say hold Attitude A?

Almost all ___ 3 Less than half ___ 1 56
More than half ___ 2 Almost none ___ 0

24. How many would you say hold Attitude B?

Almost all ___ 3 Less than half ___ 1 57
More than half ___ 2 Almost none ___ 0

25. How many would you say hold Attitude C?

Almost all ___ 3 Less than half ___ 1 58
More than half ___ 2 Almost none ___ 0

26. Of these attitudes, which one is most like your own?

Attitude A ___ 0 Attitude B ___ 1 Attitude C ___ 2 59

27. Here are two commonly held attitudes regarding the use of tests by principals and teachers. Place an X before the attitude which is most like your own.

___ 0 A. Principals and teachers should not use tests and test results in making decisions about students unless they have had substantial training in the technicalities of testing. 60

___ 1 B. The general training which all principals and teachers receive in the course of their college work is sufficient to enable them to use tests and test results intelligently.

Please do not write in this margin

28. How much formal training in the technicalities of testing do you think a teacher should have?

At least three courses (9 semester hours) ___ 3
At least two courses (6 semester hours) ___ 2
At least one course (3 semester hours) ___ 1 61
No formal course necessary ___ 0

29. How much formal training in the technicalities of testing do you think a principal should have?

At least three courses (9 semester hours) ___ 3 62
At least two courses (6 semester hours) ___ 2
At least one course (3 semester hours) ___ 1 ---1
No formal course necessary ___ 0

30. How much formal training in this area have you yourself had?

Three courses ___ 3 One course ___ 1 64
Two courses ___ 2 None ___ 0

31. Does your school ever give test results to parents?

Yes ___ No ___ 0 Uncertain ___ 2 65☐

If yes, how and on what occasions or under what circumstances is this done?

___

___

___

32. In talking with parents about their children, do you discuss test results with them?

Frequently ___ 3 Rarely ___ 1 66
Sometimes ___ 2 Never ___ 0

33. Does your school ever give test results to students?

Yes ___ No ___ 0 Uncertain ___ 2 67☐

If yes, how and on what occasions or under what circumstances is this done?

___

___

___

Please do not write in this margin
68

34. In talking with students about their plans and problems, do you discuss test results with them?

Frequently ___ 3
Sometimes ___ 2
Rarely ___ 1
Never ___ 0

---5

35. Here are three commonly held attitudes regarding the use of students' performance on standardized tests to evaluate teaching effectiveness. Place an X before the attitude which is most like your own.

___ A. A principal is thoroughly justified in using students' test scores as one means of evaluating how effectively a teacher is doing his job.
0

___ B. A principal is never justified in using students' test scores to evaluate how effectively a teacher is doing his job, but the teacher himself should use the scores for self-evaluation.
1

74

___ C. Students' test scores should not be used in any way to evaluate teaching effectiveness.
2

We would appreciate any further comments you have about how teachers learn to know the students in your school and what uses they find for such knowledge: ____________________

75☐

____

____

____________________(Use back of page for more space.)

Please seal this questionnaire in the attached envelope and mail it. Be sure you have put your name and the name of the school on the first page. This is solely to enable us correctly to group your responses with those of others. Your identity will never be revealed.

Thank you for your help.

A preliminary report on this study will probably be ready in August or September. If you would like us to send you a copy, please write below your name and the address to which you would like it sent.

____

____

____

APPENDIX II-C

The 1960 Check Sample

This appendix describes the comparison between the study sample and an independent sample drawn later. Although we did not draw two samples in the spring of 1959, we drew a second sample from the "same" populations of principals and teachers in the fall of 1960. Preliminary results from comparing these two samples were reported by Runkel, Hastings, and Damrin (1961).

Like the primary sample of schools sent questionnaires in the spring of 1959, the 1960 check-sample was also drawn randomly from high schools in the state enrolling 100 or more students. However, certain features of the check-sample were unlike the 1959 sample. For one thing, no schools in the city of Chicago were included since their Director of Research refused us permission to invite them to participate in the 1960 study. For another, only 50 schools were selected as the sample and no students were sought; on the other hand, questionnaires were solicited from the bulk of the faculty in each school. Data collection in the check-sample followed closely the procedures used in the primary sample; preliminary letters and then packages of questionnaires were sent to the principals of the 50 schools. In the case of most schools, we requested that the entire faculty participate. In the case of two schools with 79 and 95 faculty members respectively, we asked for two-thirds of the teachers (randomly selected from the Illinois School Directory for that year and listed for the principal); and in the case of three schools of more than

100 faculty members, we asked for one-half the teachers. In every case, all of the administrators were solicited. The sizes of the faculties ranged from seven to 171. The percentages of returns from the 1960 check sample are shown in Table II-3.

Some items of the questionnaires used in the present study were repeated in the questionnaires of the 1960 check sample. These items, though not as representative as one would like, provide some check on the stability of opinion among teachers between the data-collection for the present study in the spring of 1959 and the check-sample collection in the fall of 1960. Stability of opinion between the two samples was examined in the preliminary report by Runkel, Hastings, and Damrin (1961, Tables II-53 through II-55) and it was found that, although counselors and administrators showed reasonable stability, teachers showed changes from one time to the next.

However, for many purposes a change in level or degree of opinion is not an important effect. In the present study, for example, our primary interest is in relations between one variable and another. In the case of teachers, for example, we shall discuss in a later chapter the relation between size of school and the frequency with which teachers discuss the results of standardized tests with parents and students. In this example, our primary concern about reliability is in whether this relation is a stable one, not whether the mean frequency with which test results are discussed remains the same.

Turning to the stability of relations among variables, then, the report by Runkel, Hastings, and Damrin noted that training and education had been found to be important variables in previous reports of the

Table II-3: Questionnaire Returns from the 1960 Check-Sample.

Questionnaires sent to:	Number sent	Percent returned filled out	Number reached	Percent returned from those reached
Schools	50	94		
Administrators	70	77	61	89
Teachers	1103	77	973	87

series,* and examined the relations in the two samples between training variables and other variables. The two training variables used were (1) academic degree obtained, or its equivalent in semester hours of course work, and which we shall call amount of "general education," and (2) the number of courses in the technicalities of testing which the individual had taken. In Chapter III of the report by Runkel, Hastings, and Damrin, the relations between each of these training variables and the responses to a number of other questionnaire items were displayed for each sample separately.* The other questionnaire items used were those common to the two studies and are given in shortened form in Table II-4 below. The complete items are to be found in Appendix II-B, using the item numbers given in Table II-4 under the column heading "Item in App. II-B for second variable."

Relations between training and other variables seemed to be a reasonable kind of relation for use in getting some clue to the stability of relations from one sample to the other since, as we mentioned above, training turned out to be one of the more important variables in our previous studies. For example, both the general education of the faculty and the number of courses in testing turn out to be strongly related to size of school and to counselor-student ratio in the school; and these variables in turn are related to many other opinions and practices of teachers. Consequently, we present below an analysis which uses the same

---

*See Chapters IV and V of Hastings, et al. (1960) and Chapters VI and VII of Hastings, Runkel, and Damrin (1961).

*See Tables III-1 through 18 in the cited report.

Table II-4: Summary of Relations Among Certain Variables in the Present Sample With the Same Relations in the 1960 Check Sample.

Reference table in 939 report (a)	Item in App. II-B for second variable		Variables	Strength of relation (Kendall's V) (b)		Bartlett's test of difference between relations (c)	
				In this sample	In check sample	Chi-square	P
			General education (Items 6 and 8 of App. II-B)				
III-1	26	vs	Attitude toward usefulness of tests.	(d)	(d)	.75	NS
III-2	32	vs	Do you discuss test results with parents?	.25	.16	4.09	<.05
III-3	34	vs	Do you discuss test results with students?	(d)	(d)	.33	NS
III-4	17	vs	Ought academic aptitude tests be administ'd?	.02	.10	9.11	<.01
III-5	17	vs	Ought tests of achievement in subject fields?	.04	.15	8.35	<.01
III-6	17	vs	Ought tests of achievement in reading?	.00	.09	4.97	<.05
III-7	17	vs	Ought interest tests be administered?	.02	.11	4.64	<.05
III-8	17	vs	Ought personality tests be administered?	.02	.10	3.96	<.05
III-9	17	vs	Total kinds of tests respondent believed ought to be administered.	.03	.12	5.81	<.02
			Number of courses in testing (Item 30 of App. II-B)				
III-10	26	vs	Attitude toward usefulness of tests.	-.08	.03	6.93	<.01
III-11	32	vs	Do you discuss test results with parents?	(d)	(d)	2.30	NS
III-12	34	vs	Do you discuss test results with students?	(d)	(d)	2.40	NS
III-13	17	vs	Ought academic aptitude tests be administ'd?	(d)	(d)	1.62	NS
III-14	17	vs	Ought tests of achievement in subject fields?	(d)	(d)	1.26	NS
III-15	17	vs	Ought tests of achievement in reading?	(d)	(d)	.01	NS
III-16	17	vs	Ought interest tests be administered?	(d)	(d)	1.41	NS
III-17	17	vs	Ought personality tests be administered?	(d)	(d)	2.86	NS
III-18	17	vs	Total kinds of tests respondent believed ought to be administered.	(d)	(d)	.92	NS

See notes on next page.

Notes to Table II-4.

(a) These numbers identify the corresponding tables in the report on the check sample (Cooperative Research Project 939) by Runkel, Hastings, and Damrin (1961). The tables in that report show, within each sample separately, the contingent distribution of the two variables mentioned in each case.

(b) To compute Kendall's V, the original tables were collapsed to 2 x 2. For Kendall's V, see Kendall (1943, p. 311). Maruyama (1962) demonstrates that if the values in a 2 x 2 table are taken to be zero and one and Pearson r is computed, this is equivalent to Kendall's V.

Kendall, Maurice G. *The Advanced Theory of Statistics*. (2 vol.) London: Chas. Griffin & Co., 1943.

Maruyama, Magoroh. Conjunctive-disjunctive-implicational model in discrete scales. *J. exper. Educ.*, 1962, 30, 289-305.

(c) For Bartlett's test, see Snedecor (1946, pp. 200-204). This test requires a 2 x 2 x 2 contingency table, and categories of the original tables were collapsed accordingly. In the case of attitude toward the usefulness of tests, there were three choices offered the respondent (see App. II-B, item 26) and choice "C" was omitted in the computation of Bartlett's test, since that alternative received only about five percent of the choices and the other two were of primary interest.

Snedecor, George W. *Statistical Methods*. (4th Ed.) Ames, Iowa: Iowa State College Press, 1946.

(d) V was not computed where Bartlett's test was not significant at the .05 level.

variables treated by Runkel, Hastings, and Damrin, but which goes into finer detail than the earlier report.

Within each sample, a test of relation can be made, for example, between the general education (level of academic degree) of faculty members and their attitude toward the usefulness of standardized tests (item 26 in Appendix II-B). To assess the stability of this relation from the one sampling to the next, one can then compare the relation which occurred in the first sample with the relation in the other. Table II-4 shows the results of such a comparison for general education versus each of nine other variables and for number of courses in testing versus each of the same nine other variables. The subjects providing the data of Table II-4 were all faculty members pooled (teachers, administrators, and counselors) in each sample. The extreme right-hand column shows the significance of the differences between the relations found in the two samples.

At first glance, the results in the last column of Table II-4 seem to argue that there were indeed significant changes in relations among variables from one sampling to the other. Unfortunately for the cause of elegant exposition but fortunately for the reliability of the present study, the conclusion is not to be as easy as that.

In the first place, one can wonder whether the changes in relations which occurred from one sample to the other are of practical significance since none of the relations in the separate samples were strong; one reached .25 (Kendall's V) and the rest ranged between .16 and zero. But there are other points which seem to me more cogent.

Though I point it out with chagrin, many of the differences in relation shown in Table II-4 are surely due to a defect in questionnaire construction. Item 17 of the questionnaire used in this study (Appendix II-B) first asks the respondent to check from among a list the kinds of tests administered in his school. It then asks him to check those kinds which "ought to be administered in your school, regardless of whether it presently is." Even though we hoped the last phrase would prevent it, we found evidence in the patterns of answers which argued that many respondents had checked those kinds of tests they thought ought to be administered which were not yet being administered in their schools. In this case, the number of tests the respondent checked would be less than the number he would have checked had he also checked those which he thought ought to be administered and already were being administered. Consequently, this kind of failure of our instructions would reduce the reliability of the item and bring relations between the item and other variables closer to zero.

Having suspected the validity of item 17 in the questionnaire of this study, we altered its manner of presentation when constructing the questionnaire for the check-sample study, where it appeared as items 2 and 3. The latter form of the item is shown below.

2. Below is a list of six different kinds of published tests. On the line to the right of each one, place an X if you think your school ought to administer it to students.

Intelligence ____
Academic aptitude ____
Achievement in subject fields ____
Achievement in reading ____
Interests ____
Personality ____

3. Which of the following types of tests are presently administered to students in your school?

Intelligence ____
Academic aptitude ____
Achievement in subject fields ____
Achievement in reading ____
Interests ____
Personality ____

It will be noted that we made two separate items out of the earlier combined item, asking first the question about what kinds of tests *ought* to be administered and then the question about present practice in the school. The altered item used in 1960 about what kinds of tests *ought* to be administered is the item which shows relations in the check sample significantly stronger than does item 17 in the sample of the present study. Because of the probable restriction on the responses to item 17, it seems likely that an item framed like the item used later would have produced relations in the present sample much like those which occurred in the check sample. Consequently, those differences in the table associated with item 17 seem to be of very doubtful validity.

Ruling out the differences associated with item 17 leaves two significant differences in Table II-4, one associated with general education versus item 32 and one with courses in testing versus item 26. Careful inspection of the appropriate table of the report by Runkel, Hastings, and Damrin (1961, Table III-2) relevant to general education and item 32 reveals that the relations in both samples follow very closely the same diagonal through a 4 x 5 contingency table. The difference in V-values seems to reside in the fact that the heaviest cells among the relatively heavier cells seem to lie in different places along the diagonal in the two samples. Such a difference is of little moment for our purposes. We are left, finally, with the relation between number of courses in testing and attitude toward the usefulness of tests, a relation which was significant* in the sample of the present study but not significant in the check sample. This seems to be a bona fide difference.

---

*with fewer courses in testing being associated relatively more frequently with the choice of answer B; see item 26 of Appendix II-B.

My conclusion from the facts just related is that Table III-4 presents us with one difference (out of 18) between relations in the two samples which must be taken at face value, and this is a difference represented by V-values of -.08 and .03, which are very weak relations indeed. In sum, I conclude that the check sample gives us no reasonable evidence to believe that the relations examined were seriously different in the two samples, and consequently that this evidence should add something, even if only a little, to our confidence in the stability of the relations which we have found in the present study.

APPENDIX III-A

Criteria Used by Judges in Coding Curricula of Students

In coding curricula from transcripts, the following rules were followed:

1. If the transcript labels the curriculum, code accordingly.
2. Pay no attention to courses taken in the senior year.
3. Code a transcript as college preparatory if it includes (through the junior year) at least one course each of foreign language, algebra, and science.
4. Code as business or commercial if it includes four or more courses among typing, shorthand, office practice, and bookkeeping.
5. Code as vocational if it includes four or more semesters among home economics, shop sequence, industrial arts sequence, vocational agricultural sequence.
6. Code as mixture or uncertain if there is lack of a clear-cut tendency toward any one of the above curricula or if there is a combination of two or more of the curricula without a clear dominance of any.

Though these are rather objective criteria, the transcripts were coded independently, original codings compared, and any differences (there were few) resolved in conference.

APPENDIX IV-A

Additional Tests of Relations

A number of tests of relations between variables which were performed are not mentioned in the text. These are listed here, following an explanation of abbreviations used. The letter-labels for the variables were chosen so as to be mnemonically helpful.

Abbreviations for Variables

Abbreviation	Variable	Chapter in which described
AA	Academic aptitude (DAT Total)	III
AD	What does a person in this type of work actually do?	IV
AS	What abilities and skills are needed in first occupational choice?	IV
CS	Counselor-student ratio in school	III
CU	Curriculum of student	III
ER	How much education is required in this type of work (first occupational choice)?	IV
MF	Male-female	
OC	Occupational choice of student	IV
SI	Hours spent by teachers seeking information about students	III
SS	Size of school (enrollment)	III
TT	Talking with teachers or counselors about standardized tests	III
VC	Visiting the counselor	III

In the list below, the nature of the relation tested is indicated by the notation accompanying the letter H. Where only two variables are involved a monotonic relation (if the contingency table was larger than

2 x 2) is meant unless otherwise noted. Where more than two variables are involved, the variable whose symbol appears first is the dependent variable, the variables following the left-concave parenthesis ")" are the independent variables, and those following the right-concave parenthesis "(" are the control variables. For example, H: ER) CS, VC (AA means variable ER predicted from crossed categories of CS and VC while controlled on variable AA. The chi-square test of H: ER) CS, VC is analogous to multiple correlation and that of H: ER, CS (AA is analogous to partial correlation. Computing formulas for chi-square tests were taken from Mitra (1955). The meaning of the positive or negative direction indicated by (+) or (-) appended to the P-value can be ascertained by reference to the appropriate section of the text which discusses the first-listed variable.

Relation	df	P	Notes
H: ER, AA	2	.05(+)	
H: ER, CU	2	.005	Females only.
H: ER, CU	2	NS	Males only.
H: ER, OC	4	.001	Females only.
H: ER, OC	3	.001	Females in coll. prep. curric. only.
H: ER, OC	1	NS	Females in commercial curric. only.
H: ER, OC	3	.10	Females in mixed curric. only.
H: ER, OC	3	.005	Males only.
H: ER, OC	3	NS	Males in coll. prep. curric. only.
H: ER, OC	2	.001	Males in vocational curric. only.
H: ER, OC	2	NS	Males in mixed curric. only.
H: ER, CS (AA	6	NS	Males and females separately as well as all students pooled.
H: ER, CS (SI	4	NS	
H: ER, SI (CS	3	.10	Not monotonic.
H: ER, SI (TT	3	.10(+)	
H: ER, TT (VC	4	NS	
H: ER, TT (SI	4	NS	
H: ER) AA, SI	5	.01(+)	
H: ER) AA, VC	5	.02(+)	
H: ER) CS, SI	5	NS	
H: ER) CS, TT	8	NS	
H: ER) SI, TT	5	.10(+)	
H: ER) TT, VC	5	.10(+)	
H: ER) SI, TT, VC (AA	22	.10(+)	
H: AS, CS	4	.05	Not monotonic.
H: AS, CS	2	.01	Vague answers vs all others; not monotonic.
H: AS, OC	3	NS	Females in coll. prep. curric. only.
H: AS, OC	1	.001	Females in commercial curric. only.
H: AS, OC	3	.001	Females in mixed curric. only.
H: AS, OC	3	NS	Males in coll. prep. curric. only.
H: AS, OC	2	.005	Males in vocational curric. only.
H: AS, OC	2	NS	Males in mixed curric. only.
H: AS, SI	1	NS	
H: AS, TT	2	NS	
H: AS, VC	2	NS	
H: AS, CS (AA	6	NS	
H: AS, CS (SS	12	NS	
H: AS, CS (SS	4	.05	Vague answers vs all others; not monotonic.
H: AS, CU (AA	9	NS	
H: AS, SI (AA	2	NS	
H: AS, TT (AA	6	NS	
H: AS, VC (AA	6	NS	
H: AS) AA, SI	5	.05	Not monotonic.
H: AS) AA, TT	8	.05	Not monotonic.
H: AS) CS, SI	5	NS	

H: AS) CS, TT	8	NS	
H: AS) CS, VC	5	NS	
H: AS) SI, TT	5	NS	
H: AS) SI, VC	3	NS	
H: AS) TT, VC	5	NS	

H: AD, AA	2	NS	Coll. prep. students only.
H: AD, AA	2	.10	Non-coll. prep. students only.
H: AD, AA	2	NS	Commercial students only.
H: AD, AA	2	NS	Vocational students only.
H: AD, AA	2	NS	Students in mixed curric. only.
H: AD, CS	2	.05(-)	Coll. prep. students only.
H: AD, CS	2	NS	Commercial students only.
H: AS, CS	2	NS	Vocational students only.
H: AD, CS	2	NS	Students in mixed curric. only.
H: AD, CS	2	NS	Females in coll. prep. curric. only.
H: AD, CS	2	NS	Males in coll. prep. curric. only.
H: AD, CS	2	NS	Females in commercial curric. only.
H: AD, CS	2	.02(-)	Males in vocational curric. only.
H: AD, CS	2	NS	Females in mixed curric. only.
H: AD, CS	2	NS	Males in mixed curric. only.
H: AD, MF	1	.05	
H: AD, OC	3	.001	Females in mixed curric. only.
H: AD, OC	2	NS	Males in mixed curric. only.
H: AD, SI	1	.05(-)	Coll. prep. students only.
H: AD, SI	1	.05(+)	Commercial students only.
H: AD, SI	1	NS	Vocational students only.
H: AD, SI	1	NS	Students in mixed curric. only.
H: AD, SI	1	NS	Females in coll. prep. curric. only.
H: AD, SI	1	.05(-)	Males in coll. prep. curric. only.
H: AD, SI	1	NS	Females in commercial curric. only.
H: AD, SI	1	NS	Males in vocational curric. only.
H: AD, SI	1	NS	Females in mixed curric. only.
H: AD, SI	1	NS	Males in mixed curric. only.
H: AD, SS	2	NS	
H: AD, TT	1	NS	
H: AD, TT	2	NS	Coll. prep. students only.
H: AD, TT	2	NS	Commercial students only.
H: AD, TT	2	NS	Vocational students only.
H: AD, TT	2	NS	Students in mixed curric. only.
H: AD, VC	1	NS	Coll. prep. students only.
H: AD, VC	1	NS	Commercial students only.
H: AD, VC	1	NS	Vocational students only.
H: AD, VC	1	NS	Students in mixed curric. only.

H: AD, SI (CS	3	NS	
H: AD, SI (TT	3	NS	
H: AD, TT (AA	6	NS	
H: AD, TT (CS	6	NS	
H: AD, VC (AA	3	NS	Females only.
H: AD, VC (AA	3	NS	Males only.

H: AD) CS, TT	8	.05(-)
H: AD) CS, VC	5	.05(-)
H: AD) SI, TT	5	NS
H: AD) VC, TT	5	NS
H: AD) CS, TT (AA	24	NS
H: AD) CS, VC (AA	15	NS

APPENDIX IV-B

Code Categories Used for Occupational Choices of Students

00	Physical or biological scientist, mathematician, statistician.
01	Engineer: any kind.
02	Account, auditor, CPA, banker.
03	Pharmacist, veterinarian, taxidermist .
04	Author, editor, journalist, reporter, newspaperman, advertising, public relations.
05	Architect.
10	Physician, nurse, dentist.
11	Lawyer, judge, attorney, politician, diplomat, foreign service worker, intelligence service.
12	Social worker, youth director, recreation leader, psychologist, psychiatrist.
13	Teacher, professor, librarian.
14	Clergy, missionary, Christian education worker.
15	Other professional and sub-professional: communications, broadcasting, manager, executive, administrator, industrial consultant, home economist, general contractor, ship captain, railroad conductor, mill foreman, armed forces officer.
20	Aviator, explorer, space pilot, racing driver.
21	Artist, sculptor, musician, dancing teacher, piano teacher, decorator, designer, commercial artist, photographer.
22	Entertainer, dancer, singer, actor, athlete or coach (except in high school, which is coded 13).
23	Surveyor, draftsman, laboratory technician, optometry, dental assistant, undertaker.
30	Salesman, auctioneer, real estate.
31	Secretary, stenographer, bookkeeper, other office worker.
32	Model, guide, airline stewardess, receptionist.
33	Clerk: sales, store, stock, etc.
40	Protection services: armed services, police, fire, coast guard.
41	Personal services: beautician, cosmetologist, barber, chef, baker, seamstress, dietician, waiter, bartender, nurse's air, maid, janitor, doorman, bellman.
42	Operator of equipment (e.g., telephone), mail carrier, repairman, serviceman (e.g., of refrigerators).
50	Farmer, agricultural worker, breeder, rancher.
51	Other agricultural or outdoor: horticulture, irrigation, pest control, nurseryman, forestry, lumbering, fishing, trapping, wild-life, game warden.

60	Electrician, radio, electronics.
61	Mechanic, tool and die maker, machinist, machine designer.
62	Carpenter, plumber, upholsterer, steam fitter, water well driller.
63	Other skilled trades.
70	Vague descriptions.
80	Semi-skilled and unskilled: factory worker, machine operator, etc.
90	Housewife.

APPENDIX IV-C

Distribution of Students' Occupational Choices Within Student's Sex and Curriculum

Females

Occupational category abbreviation	Number					Percentage				
	Coll prep	Com-'rce	Voc-'n'l	Mixed	Total	Coll prep	Com-'rce	Voc-'n'l	Mixed	Total
Science	2	0	0	1	3	1.1	0	0	0.2	0.6
Medicine	34	6	2	30	72	19.6	6.5	12.5	13.4	14.3
Teaching	62	5	1	28	96	35.6	5.4	6.2	12.6	19.0
Other Prof.	33	2	0	15	50	19.0	2.2	0	6.7	9.9
Sub-Prof.	13	5	1	9	28	7.5	5.4	6.2	4.0	5.5
Secretary	22	61	2	101	186	12.7	66.4	12.5	45.6	36.8
Skilled	3	6	6	28	43	1.7	6.5	37.6	12.6	8.5
Vague	3	4	0	4	11	1.7	4.3	0	1.8	2.2
Housewife	2	3	4	7	16	1.1	3.3	25.0	3.1	3.2
Total	174	92	16	223	505	100.0	100.0	100.0	100.0	100.0

Males

Occupational category abbreviation	Coll prep	Com-'rce	Voc-'n'l	Mixed	Total	Coll prep	Com-'rce	Voc-'n'l	Mixed	Total
Science	65	0	12	21	98	38.7	0	8.7	21.6	23.8
Medicine	7	1	1	2	11	4.2	7.7	0.7	2.1	2.6
Teaching	18	0	6	5	29	10.7	0	4.4	5.2	7.0
Other Prof.	32	2	10	17	61	19.0	15.4	7.2	17.4	14.6
Sub-Prof.	11	0	17	12	40	6.5	0	12.3	12.4	9.6
Sales	5	5	2	5	17	3.0	38.4	1.4	5.2	4.1
Skilled	22	5	78	32	137	13.1	38.5	56.6	33.0	32.9
Vague	8	0	12	3	23	4.8	0	8.7	3.1	5.4
Total	168	13	138	97	416	100.0	100.0	100.0	100.0	100.0

APPENDIX V-A

Additional Tests of Relations

A number of tests of relations between variables which were performed are not mentioned in the text. These are listed here, following an explanation of abbreviations used. The letter-labels for the variables were chosen so as to be mnemonically helpful.

Abbreviations for Variables

Abbreviation	Variable	Chapter in which described
AA	Academic aptitude (DAT Total)	III
CS	Counselor-student ratio in school	III
CU	Curriculum of student	III
MF	Male-female	
OC	Occupational choice of student	IV
SI	Hours spent by teachers seeking information about students	III
SS	Size of school (enrollment)	III
TT	Talking with teachers or counselors about standardized tests	III
VC	Visiting the counselor	III
CU-OC	Appropriateness of curriculum to occupational choice	V
OC-TP	Appropriateness of occupational choice to scores on tests of Illinois Statewide High School Testing Program	V

In the list below, the nature of the relation tested is indicated by the notation accompanying the letter H. Where only two variables are involved a monotonic relation (if the contingency table was larger than 2 x 2) is meant unless otherwise noted. Where more than two variables are involved, the variable whose symbol appears first is the dependent variable, the variables following the left-concave parenthesis ")" are the independent variables, and those following the right-concave parenthesis "(" are the control variables. For example, H: CU-OC) CS, VC (AA means variable CU-OC predicted from crossed categories of CS and VC while controlled on variable AA. The chi-square test of H: CU-OC) CS, VC is analogous to multiple correlation and that of H: CU-OC, CS (AA is analogous to partial correlation. Computing formulas for chi-square tests were taken from Mitra (1955). The meaning of the positive or negative direction indicated by (+) or (-) appended to the P-value can be ascertained by reference to the appropriate section of the text which discusses the first-listed variable.

Relation	df	P	Notes
H: CU-OC, AA	4	.001(+)	
H: CU-OC, ER	4	NS	
H: CU-OC, TT (AA	12	NS	
H: CU-OC, TT (VC	8	NS	
H: CU-OC, VC (TT	6	NS	
H: CU-OC) CS, SI	10	NS	
H: CU-OC) CS, TT	16	NS	
H: CU-OC) CS, VC	10	NS	
H: CU-OC) SI, TT	10	NS	
H: CU-OC) SI, VC	6	NS	
H: CU-OC) TT, VC	10	.02(+)	
H: CU-OC) AA, SI, TT	18	NS	
H: CU-OC) CS, SI, TT	18	NS	
H: CU-OC) CS, SI, VC	24	NS	
H: CU-OC) CS, TT, VC	18	NS	
H: CU-OC) SI, TT, VC	20	NS	
H: CU-OC) CS, VC (AA	15	NS	
H: CU-OC) CS, TT (SI	16	NS	
H: CU-OC) CS, VC (SI	20	NS	
H: CU-OC) SI, TT (VC	20	NS	
H: CU-OC, AA	2	.001(+)	CU-OC based on both first and second occupational choices.
H: CU-OC, CS	2	.05(-)	1st and 2nd occ. choices.
H: CU-OC, SI	1	NS	1st and 2nd occ. choices.
H: CU-OC, TT	2	.10(+)	1st and 2nd occ. choices.
H: CU-OC, VC	1	NS	1st and 2nd occ. choices.

H: CU-OC) CS, SI	5	NS	1st and 2nd occ. choices.
H: CU-OC) CS, TT	8	.05	1st and 2nd occ. choices; not monotonic.
H: CU-OC) CS, VC	5	.10	1st and 2nd occ. choices; not monotonic.
H: CU-OC) SI, TT	5	NS	1st and 2nd occ. choices.
H: CU-OC) SI, VC	3	NS	1st and 2nd occ. choices.
H: CU-OC) TT, VC	5	NS	
H: OC-TP, AA	4	.001(+)	
H: OC-TP, ER	4	NS	
H: OC-TP, CS (SI	8	.01(+)	
H: OC-TP, CS (TT	12	.05(+)	
H: OC-TP, SI (CS	6	.01(+)	
H: OC-TP, SI (TT	6	.001(+)	
H: OC-TP, TT (SI	8	.001(+)	
H: OC-TP, VC (TT	6	NS	
H: OC-TP, CS (AA, SI	6	NS	But sig at .034 for low AA and high SI.
H: OC-TP, CS (AA, TT	6	NS	But sig at .001 for low AA and low TT.
H: OC-TP) CS, SI	10	.001(+)	
H: OC-TP) CS, TT	16	.001(+)	
H: OC-TP) SI, TT	10	.001(+)	
H: OC-TP, AA	2	.001(+)	CU-TP based on both first and second occupational choices.
H: OC-TP, CS	2	.001(+)	1st and 2nd occ. choices.
H: OC-TP, SI	1	.01(+)	1st and 2nd occ. choices.
H: OC-TP, TT	2	.001(+)	1st and 2nd occ. choices.
H: OC-TP, VC	1	NS	1st and 2nd occ. choices.
H: OC-TP, CS (AA	6	NS	1st and 2nd occ. choices.
H: OC-TP, CS (SI	4	.001(+)	1st and 2nd occ. choices.
H: OC-TP, CS (TT	6	.02(+)	1st and 2nd occ. choices.
H: OC-TP, SI (AA	3	NS	1st and 2nd occ. choices.
H: OC-TP, SI (CS	3	.05(+)	1st and 2nd occ. choices.
H: OC-TP, SI (TT	3	.05(+)	1st and 2nd occ. choices.
H: OC-TP, TT (AA	6	.10(+)	1st and 2nd occ. choices.
H: OC-TP, TT (CS	6	.001(+)	1st and 2nd occ. choices.
H: OC-TP, TT (SI	4	.001(+)	1st and 2nd occ. choices.
H: OC-TP) CS, SI	5	.001(+)	1st and 2nd occ. choices.
H: OC-TP) CS, TT	8	.001(+)	1st and 2nd occ. choices.
H: OC-TP) SI, TT	5	.001(+)	1st and 2nd occ. choices.
H: OC-TP) CS, SI (AA	10	.10	1st and 2nd occ. choices.
H: OC-TP) CS, TT (AA	16	.10	1st and 2nd occ. choices.
H: OC-TP) SI, TT (CS	17	.001(+)	1st and 2nd occ. choices.

APPENDIX V-B

Coding of Appropriateness of Curriculum to Occupational Choice and of Occupational Choice to Scores on the Tests of the Illinois Statewide High School Testing Program

General Instructions to Judges

Three kinds of judgments will be made: (1) the type of curriculum of the student, (2) the appropriateness of the student's occupational choice judging from his courses and grades, using transcripts, and (3) the appropriateness of his occupational choice judging from his scores on the Illinois Statewide Testing Program (SWTP). The two latter kinds of judgments must always be made at separate sittings since judgments of these two kinds of appropriateness are to be made independently.

Begin with type 2, appropriateness in respect to courses and grades. Look at the code for 1st occupational choice on the IBM print-off. Read the meaning of the code number in the code book. Then look at the transcript and judge whether the courses and grades up through the first semester of the junior year are a reasonable preparation in high school for that occupation. The categories in which the judgment should be framed are given below. Then do the same for the 2nd occupational choice. Sheets bearing standardized test scores will have been removed before you see the transcripts; however, if you come upon a transcript which still bears such scores, pay no attention to them.

Before doing type 3 judging (appropriateness in respect to SWTP scores), study carefully the meanings of the percentile scores on the SWTP as explained in the SWTP's *Aids to Interpretation*. Looking at each line of the print-off in turn, judge whether the characteristics of the student shown by his SWTP scores are suitable to the chosen occupation.

Codes for Appropriateness of Curriculum to Occupational Choice

3 Occupational choice is housewife.
2 Occupational choice is appropriate to courses and grades through 1st semester of the junior year.
1 The information available puts appropriateness in the doubtful range. Information does not indicate that choice is inappropriate, but neither does it give much confidence in appropriateness. Do not use this code for insufficient information; use it for conflicting information and borderline cases.
0 Occupational choice is inappropriate.
x Insufficient information. Statement of occupational choice is too vague. Code "x" if occupational choice is coded 70 (see App. IV-B).

Codes for Appropriateness of SWTP Scores to Occupational Choice

3 Occupational choice is housewife.
2 Occupational choice is appropriate to SWTP scores.
1 Information available puts appropriateness in the doubtful range; conflicting information or borderline case.
0 Occupational choice is inappropriate.
x Insufficient information; SWTP scores not relevant; occupational choice is coded 70.

Further Judging Procedures

Each of the two judges worked on a number of students for practice. The two judges then had a conference to check their judgments and establish common criteria to be used in later judgments. They then returned to separate work. Each judge made his judgments one type at a time (curriculum or SWTP scores) and separately. After coding separately, the two judges joined in conferences to check the judgments and arrive at an agreement on differences. The final judgments were then punched on IBM cards for analysis.

Curriculum

See Appendix III-A.

Appropriateness of Curriculum to Occupational Choice

The occupational choices of the students were classified into 32 categories, each defining an occupational category (see App. IV-B). The judges determined the appropriateness of the occupational choice when compared with the curriculum and with grades obtained in the pertinent courses.

For each category the judges established two criteria in terms of the type of curriculum each student pursued and his success in this curriculum as determined by final grades. The required curriculum and level of success for each category were as follows:

Occ. code	
00-15	College-preparatory curriculum and high grades (B average or above)
20	Any of the curricula, high grades (B average or above)
21, 42	Vocational, mixture, average grades (C average or above)
23, 50, 60, 61, 62, 63	Vocational curriculum and average or above grades (C average or above)
30, 32, 33, 41	Any curriculum, average or above grades (C average or above)
31	Business, average or above grades (C average or above)
70	Coded x -- vague descriptions
80	Any curriculum, no minimum grade average
90	Was kept in a separate category, namely 3

22, 40, and 51 were coded as 1 (doubtful) because the requirements of job were not sufficiently specific to indicate whether the occupational choices were appropriate or inappropriate.

Appropriateness of Scores on SWTP to Occupational Choice

For each occupational category the judges established the following criteria in determining the appropriateness of the students' test scores to their occupational choices. Abbreviations are shown first.

AR: Abstract reasoning
VR: Verbal reasoning
NSF: Natural science reading comprehension
SSR: Social science reading comprehension
WS: Writing skills achievement

Occ. code	
00, 01, 02, 05, 20	AR, VR 70th percentile or above Others 50 or above
03	NSR 70 or above Others 50 or above
04	VR, WS 70 or above Others 50 or above
10*	For males AR, VR 70 or above Other tests 50 or above For females all 50 or above
11	All 60 or above
12	SSR, VR 70 or above Others 60 or above
13, 14, 15, 21, 23, 31	All 50 or above
22, 40, 51	Code 1 (doubtful) for the same reasons indicated previously
30	VR 50 or above Others 40 or above
32, 60, 61, 62, 63	All 40 or above
33	All 35 or above

---

* The category included physician and nurse; the judges assumed physician to be mainly a male occupation and requires different qualifications from nursing which is primarily a female occupation.

41, 42, 50	All 30 or above
70	Code x for the same reasons indicated previously
80	No minimum
90	Code 3 (housewife)

In cases where a specific score on a test was required at a certain level, this was considered as a minimum score. Those tests not specifically requiring minima were taken as averages; for example, 03 showed NSR 70 or above which was taken as a minimum and others 50 or above which allowed fluctuation around a 50 or above average.

APPENDIX V-C

Frequencies of Junior High School Students in Indicated Categories of Appropriateness of Curriculum to SWTP Abilities as Judged Only from First Occupational Choice and in Indicated Categories of Appropriateness as Judged from Both First and Second Occupational Choices

Judged from first and second choices	Judged from first occupational choice				
	Housewife	No	Doubtful	Yes	Total
Yes	7	0	0	363	370
Probably	0	0	29	40	69
Doubtful	2	38	55	31	126
Unlikely	0	37	28	0	65
No	7	377	0	0	384
Housewife only	1	0	0	0	1
Total	17	452	112	434	1015

APPENDIX V-D

Schools With No Counselors

One primary question in each section of Chapters IV and V was whether the student-counselor ratio in the school was associated with the criterion variable being discussed in that section. In some sections we found counselor-student ratio associated with differences in the criterion variable and in some not. Where practical effects are a consideration, one ever-ready strategy is to look at the extreme conditions, to see whether a very high value of one variable, contrasted with a very low value, can locate a difference in another variable. Since we had two schools in our sample whose principals said they contained no counselors, it is possible for us to compare these schools with schools of high counselor-student ratio to see whether differences show up in our criterion variable of an order not seen in the analyses we already have recounted.

Before displaying the results of this section, two introductory comments are in order. First, the two no-counselor schools provided us only with data on 56 students. With so few cases no control variables can be used in the analysis. This means that if any effect is going to appear with new strength it must appear so strongly as to overcome the effects of other variables not controlled in this analysis.

The other point is that the no-counselor schools may not have been strictly so. As we mentioned in Chapter III, we asked each principal to tell us how many guidance counselors he had who were employed in guidance duties at least half-time. These two schools may have contained persons assigned to guidance less than half-time. Nevertheless, these two schools represent the most extreme examples of a dearth of counselors which our sample contained; and for expository purposes, I shall continue to refer to them as "no-counselor" schools.

To put the results of this "extremes" analysis very briefly, no new relations were turned up. Table IV-1 showed no significant relation between counselor-student ratio and exactness of answer concerning the educational requirements of the occupation, and Table V-C-1 of this appendix agrees with this. In Chapter IV we mentioned a weak and non-montonic relation between counselor-student ratio and answers concerning abilities and skills needed in the occupation; Table V-C-2 shows a similar unprofitable result. Specificity of answer concerning what persons in the occupation actually do, when distributed simply against counselor-student ratio, gave us the unexpected negative relation which we saw in Table IV-10; Table V-C-3 gives the same picture. In Chapter V we mentioned that no significant relation was found in the simple comparison of counselor-student ratio with appropriateness of the student's occupational choice to his curriculum; Table V-C-4 agrees. Finally, we mentioned that counselor-student ratio versus appropriateness of occupational choice to SWTP abilities, without further controls, showed up highly significant; Table V-C-5 merely confirms this.

Table V-C-1. Percentages of Students in Schools Having Indicated Counselor-Student Ratios (with No-Counselor Schools Listed Separately) Who Gave Exact Answers to the Question, "How Much Education Is Required for This Type of Work?"

Counselor-student ratio	Type of answer: Partial or vague	Type of answer: Exact	Total	N
.00323 - .00794	51	49	100	361
.00168 - .00322	52	48	100	322
.00080 - .00167	52	48	100	300
Zero	43	57	100	56
Total	51	49	100	1039

Chi-square = 2.15, NS

Table V-C-2. Percentages of Students in Schools Having Indicated Counselor-Student Ratios (with No-Counselor Schools Listed Separately) Who Described Knowledge Typically Learned in School in Response to the Question, "What Abilities and Skills Must a Person Have Who Engages in This Type of Work?"

Counselor-student ratio	Type of answer: Physical, mental, personal, or vague	Type of answer: Knowledge typically learned in school	Total	N
.00323 - .00794	45	55	100	376
.00168 - .00322	49	51	100	332
.00080 - .00167	40	60	100	302
Zero	55	45	100	56
Total	45	55	100	1066

Chi-square = 7.81, $P<.05$

Table V-C-3. Percentages of Students in Schools Having Indicated Counselor-Student Ratios (with No-Counselor Schools Listed Separately) Who Gave Specific Answers to the Question, "What Does a Person in This Type of Work Actually Do?"

	Type of answer			
Counselor-student ratio	General, vague, or value	Specific	Total	N
.00323 - .00794	60	40	100	354
.00168 - .00322	49	51	100	303
.00080 - .00167	52	48	100	293
Zero	45	55	100	56
Total	53	47	100	1006

Chi-square = 10.62, P<.02

Table V-C-4. Percentages of Students in Schools Having Indicated Counselor-Student Ratios (with No-Counselor Schools Listed Separately) Whose Curricula Were Judged Appropriate to Their Occupational Choices (mixed or uncertain curricula and occupational choices of housewife omitted).

	Appropriateness			
Counselor-student ratio	No or doubtful	Yes	Total	N
.00323 - .00794	42	58	100	224
.00168 - .00322	45	55	100	177
.00080 - .00167	37	63	100	112
Zero	33	67	100	43
Total	41	59	100	556

Chi-square = 4.91, NS

Table V-C-5. Percentages of Students in Schools Having Indicated Counselor-Student Ratios (with No-Counselor Schools Listed Separately) Whose Occupational Choices Were Judged Appropriate to Their SWTP Abilities (housewife choices omitted).

Counselor-student ratio	Appropriateness			
	No or doubtful	Yes	Total	N
.00323 - .00794	49	51	100	356
.00168 - .00322	59	41	100	312
.00080 - .00167	62	38	100	277
Zero	62	38	100	55
Total	56	44	100	1000

Chi-square = 27.07, $P < .001$

APPENDIX V-E

Values of the Chief Predictor and Criterion Variables for Each School in Which Students Were Sampled

Column headings are explained first, followed by the tabulation of the values.

Column	Description
A	Percentage of students in upper third of academic aptitude.
B	Percentage of students reporting having visited the counselor.
C	Counselor-student ratio multiplied by 100.
D	Percentage of students reporting that teachers or counselors talk to them "sometimes" or "frequently" about test results.
E	Approx. number of hours teachers reported spending per semester seeking information about students. "High" = 16.5 to 28.4 hours; "middle" = 10.5 to 16.4 hours; "low" = 3.0 to 10.4 hours.
F	Percentage of students giving exact answers concerning education required for chosen occupation.
G	Percentage of students mentioning abilities and skills learned in school as needed in occupation.
H	Percentage of students giving specific answers about duties of the chosen occupation.
I	Percentage of those students in the upper third (statewide) of academic aptitude who were enrolled in college-preparatory curriculum.
J	Percentage of students whose occupational choices were judged appropriate to their curricula.
K	Percentage of students whose occupational choices were judged appropriate to their SWTP abilities.

(Note: School numbers correspond to those in Table III-1.)

School	Predictors					Criteria					
No.	A	B	C	D	E	F	G	H	I	J	K
1	59	70	.79	72	Hi	30	38	46	76	43	64
5	50	96	.44	89	Hi	42	50	52	86	56	58
11	59	85	.35	81	Mid	56	33	42	81	59	67
4	48	87	.52	89	Mid	54	62	36	67	38	58
3	66	70	.53	41	Hi	52	52	21	50	39	74
7	35	73	.41	64	Lo	52	65	31	50*	56	45
24	47	83	.18	79	Hi	40	60	50	100	64	66
35	46	29	.08	63	Mid	67	46	39	36	67	54
19	40	37	.26	52	Mid	60	44	55	70	52	40
26	39	52	.17	65	Lo	33	68	57	30	56	50
32	38	38	.10	57	Lo	46	71	50	44	53	35
30	36	38	.13	50	Mid	36	71	29	60*	67	54
6	32	70	.42	86	Mid	46	41	54	30	52	57
2	28	77	.56	59	Mid	43	52	44	88	54	41
21	28	83	.23	69	Hi	69	48	43	43	50	28
17	33	76	.30	59	Lo	30	48	42	71	46	38
18	11	93	.27	52	Mid	44	56	72	33*	67	31
28	8	73	.16	60	Hi	54	50	42	100*	28	16
12	32	43	.35	71	Mid	56	64	42	71	48	39
8	32	33	.40	65	Hi	50	54	29	50	67	54
10	31	65	.40	58	Mid	54	54	32	71	60	48
13	33	48	.32	62	Mid	66	54	49	77	38	43
9	17	38	.40	22	Lo	45	69	41	80*	35	12
25	33	43	.17	89	Mid	50	33	29	60	43	45
16	34	67	.31	71	Lo	55	66	32	60	57	46
33	33	50	.09	70	Mid	53	53	52	33	62	50
37	33	27	0	36	Lo	66	47	52	56	71	36
20	34	59	.26	66	Mid	52	52	54	17*	52	43
23	24	28	.19	62	Mid	39	55	65	71	44	48
31	23	27	.11	48	Lo	43	60	37	83*	52	27
38	22	26	0	52	Mid	48	41	59	100*	64	41
15	21	45	.31	44	Lo	46	54	63	40*	46	39
14	10	65	.32	80	Mid	10	30	50	100*	50	40
22	23	60	.20	46	Mid	50	47	57	50*	44	29
36	21	63	.08	72	Hi	62	59	46	100*	38	32
29	26	63	.15	69	Mid	42	63	54	43	46	41
27	10	66	.16	48	Mid	31	50	57	50*	75	31
34	18	63	.08	52	Lo	48	61	46	60*	52	33

* Percentage based on fewer than 7 students in upper third of academic aptitude.

APPENDIX VII-A

Additional Tests of Relations

A number of tests of relations between variables which were performed are not mentioned in the text. These are listed here, following an explanation of abbreviations used. The letter-labels for the variables were chosen so as to be mnemonically helpful.

Abbreviations for Variables

Abbreviation	Variable	Chapter in which described
AA	Academic aptitude (DAT Total)	III
CS	Counselor-student ratio in school	III
CU	Curriculum of student	III
GP	Student's correctness about whether test results were given to parents	VII
MP	Student's correctness about manner of conveying test results to parents	VII
MS	Student's correctness about manner of conveying test results to students	VII
SS	Size of school (enrollment)	III
ST	Student's correctness about whether school administered standardized tests	VII
SW	Student's correctness about whether school administered tests of SWTP	VII
TT	Talking with teachers or counselors about standardized test results	III
VC	Visiting the counselor	III

In the list below, the nature of the relation tested is indicated by the notation accompanying the letter H. Where only two variables are involved a monotonic relation (if the contingency table was larger than 2 x 2) is meant unless otherwise noted. Where more than two variables are involved, the variable whose symbol appears first is the dependent variable, the variables following the left-concave parenthesis ")" are the independent variables, and those following the right-concave parenthesis "(" are the control variables. The meaning of the positive or negative direction indicated by (+) or (-) appended to the P-value can be ascertained by reference to the appropriate section of the text which discussed the first-listed variable.

Relation	df	P	Notes
H: GP, AA	4	.001(+)	
H: GP, CS	4	.001(+)	
H: GP, VC	2	.02(+)	
H: GP, AA (TT	16	.001(+)	
H: MS, CS (AA	4	.01(+)	College preparatory only.
H: MS, CS (AA	4	.05(+)	Other curricula only.
H: MS, CS (CU	4	.01(+)	
H: MS, TT (AA	6	.001(+)	
H: MS, TT (AA	4	.05(+)	College preparatory only.
H: MS, TT (AA	4	.001(+)	Other curricula only.
H: ST, AA	2	.001(+)	
H: ST, CS	2	.01(+)	
H: ST, SS	2	.01(+)	
H: ST, TT	3	.01(+)	
H: ST, VC	1	.01(+)	
H: ST) CS, SS	8	.001(+)	
H: ST) TT, VC	7	.01(+)	
H: ST, CS (SS	6	.05(+)	Disproportionality mostly in medium and large schools.
H: ST, VC (AA	3	.05(+)	Disproportionality mostly among low DAT.
H: SW, AA	2	.01(+)	
H: SW, CS	2	.01(+)	
H: SW, TT	3	.001(+)	
H: SW, VC	1	.05(+)	
H: SW) AA, CS, TT	35	.001	
H: SW) AA, TT, VC	23	.001	
H: SW) TT, VC	7	.001(+)	
H: SW, CS (AA	6	.001(+)	
H: SW, CS (SS	6	.001(+)	Disproportionality in small schools.

APPENDIX VIII-A

Additional Tests of Relations

A number of tests of relations between variables which were performed are not mentioned in the text. These are listed here, following an explanation of abbreviations used.

Abbreviations for Variables

Abbreviation	Variable	Chapter in which described
AA	Academic aptitude (DAT Total)	III
CS	Counselor-student ratio in school	III
CSO	Confidants in school or out: type of person mentioned in answer to either question: "When you want to talk over your plans and problems with someone, to whom do you usually go?" or "Is there anyone in school with whom you talk over your plans and problems?"	VIII
CU	Curriculum of student	III
FWI	"How, or from whom, did you find out the information you have given ...?"	VIII
MF	Male-female	
SI	Mean hours per semester spent by teachers in seeking information about students	III
SS	Size of school (enrollment)	III
TGK	"Do you think that your teachers spend as much time as they ought to spend in getting to know their students?"	Item 5, App. II-A
TPP	"When you want to talk over your plans and problems with someone, to whom do you usually go?"	VIII
TT	Talking with teachers or counselors about standardized test results	III
VC	Visiting the counselor	III

In the list below, the nature of the relation tested is indicated by the notation used. Where only two variables are involved a monotonic relation (if the contingency table was larger than 2 x 2) is meant unless otherwise noted. Where more than two variables are involved, the variable whose symbol appears first is the dependent variable, the variables following the left-concave parenthesis ")" are the independent variables, and those following the right-concave parenthesis "(" are the control variables. The meaning of the positive or negative direction indicated by (+) or (-) appended to the P-value can be ascertained by reference to the appropriate section of the text which discusses the first-listed variable.

Relation	df	P	Notes
CSO, AA	4	.001	
CSO, CS	4	.001	Not monotonic.
CSO, SS	4	.01(+)	
CSO, CS(AA, CU	24	NS	
CSO, CS(SS	12	.01	Sig. in middle sizes, but not monotonic.
CSO, SI(AA, CS	18	NS	
CSO, SS(CS	12	NS	
CSO)CS, SS	16	.001(+)	
FWI, VC	1	.05(+)	
FWI, CS(AA, MF	6	NS	
FWI, CS(AA, CU	6	NS	
FWI, CS(SS	18	NS	
FWI, MF(CU	8	.05	
FWI, VC(AA	3	NS	
FWI, VC(AA, CU	3	NS	
FWI, VC(AA, MF	3	NS	
TGK, CS	2	NS	
TGK, TPP	2	NS	
TGK, VC	1	NS	
TPP, AA	4	NS	
TPP, CS	4	NS	
TPP, CS(AA	12	NS	
TPP, CS(CU	8	NS	
TPP, CS(MF	8	NS	
TPP, CS(SS	6	NS	
TPP, CS(TT	8	NS	
TPP, TT(MT	4	NS	
TPP, VC(AA	6	.001(+)	
TPP)CS, SS	16	NS	

APPENDIX VIII-B

Coding of Answers to Items in the Student's Questionnaire

The items here are numbered as in the student's questionnaire reproduced in Appendix II-B.

16. How, or from whom, did you find out the information you have given in answer to (questions about the chosen occupation)?

0 Self: "from my own experience," "I learned it from being in school," etc.
1 Family: father, uncle, parents, family, etc.
2 Friends, specified or general.
3 Teachers, unspecified.
4 Teachers, specified; names or otherwise identifies the teacher.
5 Guidance counselor or dean.
6 Specified others: college representative, voice teachers, a professional draftsman, etc.
7 Specific club: FTA, FFA, Boy Scouts, youth group, etc.
8 Mass media or reading.
9 Multiple sources.

17. When you want to talk over your plans and problems with someone, to whom do you usually go?

0 No one or self.
1 Family.
2 Friends.
3 Principal or administrator.
4 Counselor or dean.
5 Teacher.
6 Other adult.
7 Person not identifiable as any of above.
9 Multiple sources.

18. Is there anyone in school with whom you talk over your plans and problems?

0 No.
1 Friend.
2 Principal or administrator.
3 Counselor or dean.
4 Teacher of subject in area of R's first occupational choice and without counseling duties.
5 Teacher of subject not in area of R's first occupational choice and without counseling duties.
6 Adult not in school: family, relatives, employer, etc.
7 Unidentifiable adult.
8 Teacher who also has some counseling duties.
9 Yes with no write-in or with uncodable write-in.

APPENDIX IX-A

Additional Tests of Relations

A number of tests of relations between variables which were performed are not mentioned in the text. These are listed here, following an explanation of abbreviations used.

Abbreviations for Variables

Abbreviation	Variable	Chapter in which described
AA	Academic aptitude (DAT Total)	III
CS	Counselor-student ratio in school	III
CU	Curriculum of student	III
KAA	Do your teachers know this about you: aspirations and ambitions?	IX
KEA	Do your teachers know this about you: esthetic and artistic abilities?	IX
KFH	Do your teachers know this about you: family and home life?	IX
KFW	Do your teachers know this about you: fears and worries?	IX
KI	Do your teachers know this about you: interests?	IX
KIN	Do your teachers know this about you: intelligence and academic aptitude?	IX
KPC	Do your teachers know this about you: personality and character?	IX
KSS	Do your teachers know this about you: performance in school subjects?	IX
SI	Mean hours per semester spent by teachers in seeking information about students	III
SS	Size of school (enrollment)	III

Abbreviation	Variable	Chapter in which described
TGK	"Do you think that your teachers spend as much time as they ought to spend in getting to know their students?"	Item 5, App. II-A
TT	Talking with teachers or counselors about standardized test results	III
VC	Visiting the counselor	III

In the list below, the nature of the relation tested is indicated by the notation used. Where only two variables are involved a monotonic relation (if the contingency table was larger than 2 x 2) is meant unless otherwise noted. Where more than two variables are involved, the variable whose symbol appears first is the dependent variable, the variables following the left-concave parenthesis ")" are the independent variables, and those following the right-concave parenthesis "(" are the control variables. The meaning of the positive or negative direction indicated by (+) or (-) appended to the P-value can be ascertained by reference to the appropriate section of the text which discusses the first-listed variable.

Relation	df	P	Notes
KAA, AA	4	NS	
KAA, CS	4	NS	
KAA, CU	1	NS	
KAA, TGK	2	NS	
KAA, VC	2	.001(+)	
KAA, SI (AA, CU	6	NS	
KAA, VC (AA	6	.001(+)	
KAA) AA, CS	16	NS	
KAA) AA, VC	10	.001(+)	
KEA, AA	4	.01	Not monotonic.
KEA, CS	4	NS	
KEA, TGK	2	NS	
KEA, VC	2	NS	
KEA, CS (AA	12	NS	
KEA) AA, CS	16	.02	Not monotonic.
KEA) AA, VC	10	.10	
KFH, AA	4	NS	
KFH, CS	4	NS	
KFH, CU	1	NS	
KFH, TGK	2	NS	
KFH, VC	2	.001(+)	
KFH, SI (AA, CU	6	NS	
KFH, VC (AA	3	.001(+)	
KFH) AA, CS	8	NS	
KFH) AA, VC	5	.001(+)	
KFW, AA	4	.01(-)	
KFW, CS	4	NS	
KFW, CU	1	NS	
KFW, TGK	2	NS	
KFW, VC	2	.01	
KFW, SI (AA, CU	6	NS	
KFW, TGK (AA	3	NS	
KFW, VC (AA, CU	6	.06(+)	
KFW) AA, CS	8	.10	Not monotonic.
KFW) AA, VC	5	.001	Not monotonic.

KI, **AA**	4	NS
KI, CS	4	NS
KI, CU	1	NS
KI, TGK	2	NS
KI, VC	2	.001(+)
KI, VC (**AA**, CU	6	.01(+)
KI, SI (**AA**, CU	6	NS
KI) **AA**, CS	16	NS
KI) **AA**, VC	10	.001(+)
KIN, AA	4	NS
KIN, CS	2	NS
KIN, TGK	2	.01(+)
KIN, VC	4	.001(+)
KIN, CS (**AA**	6	NS
KIN, VC (**AA**	3	NS
KIN) **AA**, CS	8	.05
KIN) **AA**, VC	5	.01(+)
KPC, **AA**	4	NS
KPC, CS	4	NS
KPC, TGK	2	NS
KPC, VC	2	.05(+)
KPC, VC (**AA**	3	NS
KPC) **AA**, CS	8	NS
KPC) **AA**, VC	5	NS
KSS, **AA**	2	NS
KSS, CS	2	NS
KSS, TGK	1	NS
KSS, VC	2	NS
KSS) **AA**, CS	8	NS
KSS) **AA**, VC	5	NS
SI, TT	3	.001(+)
SI, VC	3	.001(+)
TGK, **AA**	2	.05(+)
TGK, CS	2	NS
TGK, SI	3	NS
TGK, SS	2	NS
TGK, TT	3	.02(+)
TGK, VC	1	NS
TGK, CS (SS	6	NS
TGK, VC (**AA**	3	NS
TT, VC	3	.001(+)

APPENDIX XI-A

Additional Tests of Relations

A number of tests of relations between variables which were performed are not mentioned in the text. These are listed here, following an explanation of abbreviations used.

Abbreviations for Variables

Abbreviation	Variable	Chapter in which described
AI	Within the past two years, has your school made any innovations or changes in its testing program, its guidance program, or its counseling services?	XI
AKT	How many teachers would agree with you about what kinds of tests ought to be administered?	Item 18, App. II-B
ASI	Additional time teacher reported he ought to spend seeking information about students over time now spent.	XI
CS	Counselor-student ratio in school.	III
CTT	How many courses in the technicalities of testing do you think a teacher should have?	Item 28, App. II-B
CTY	How many courses in the technicalities of testing have you yourself had?	XI
ED	Academic degree held by teacher.	XI
HTT	How do you and the other teachers find out what test scores students made, once the scores are reported to the school?	XI
IDN	Number of kinds of information teacher felt desirable but not available in school files.	XI
IFS	Teacher's response to whether the information about students in the school files sufficient?	XI
LTS	About how many teachers in your school would you say make it a point to look up the test scores of students? (asked of teachers)	Item 22, App. II-B
NKI	Number of kinds of information teacher said could be found in the school files.	XI

NKT	Number of kinds of tests teacher said are now administered.	XI
PDT	In talking with parents about their children, do you discuss test results with them?	XI
PFS	Principal's response to whether the information about students in the school files is sufficient.	XI
PIT	Principals: Apart from the actual time they spend in the classroom, about how often would you say that most of your teachers take time out to gather information about students? (Seeking information by teacher.)	XI
PTS	Principals: About how many of your teachers would you say make it a point to look up the test scores of their students?	XI
SDT	In talking with students about their plans and problems, do you discuss test results with them?	XI
SIT	Apart from the actual time you spend in the classroom, about how often do you take time out to gather information about students? (Seeking information by teacher.)	XI
SS	Size of school (enrollment).	III
TON	Number of kinds of tests teacher said ought to be administered but are not now.	XI
TRP	Teacher's report of manner of conveying test results to parents.	XI
TRS	Teacher's report of manner of conveying test results to students.	XI
YS	Teacher's years at this school.	XI
YT	Teacher's years in teaching.	XI

In the list below, the nature of the relation tested is indicated by the notation used. Where only two variables are involved a monotonic relation (if the contingency table was larger than 2 x 2) is meant unless otherwise noted. Where more than two variables are involved, the variable whose symbol appears first is the dependent variable; the variables following the left-concave parenthesis ")" are the independent variables; and those following the right-concave parenthesis "(" are the control variables. The meaning of the positive or negative direction indicated by (+) or (-) appended to the P-value can be ascertained by reference to the appropriate section of the text which discusses the first-listed variable.

Relation	df	P	Notes
AI, CS	2	.001(+)	
AI, SS	2	.001(+)	
AKT)CS, SS	7	NS	
ASI, SS(CS	5	.10(-)	Sig. at .05 among high CS.
CTT)CS, SS	7	NS	
HTT, CS	2	.001(+)	
HTT, SS	2	.001(+)	
IDN, CS	4	.001(-)	
IDN, SS	4	.001(-)	
IDN)CS, SS(NKI	38	.001(+)	
IFS, CS	2	.001(+)	
IFS, SS	2	.001(+)	
LTS)CS, SS	7	NS	
NKI, CS	4	.001(+)	
PDT, CS	2	.001	Non-monotonic
PDT, SS	2	.001(+)	
PDT, CS(CTY	4	.01	Non-monotonic
PDT, CS(CTY, SS	10	NS	
PDT, CTY(CS	3	.001(+)	
PDT, CTY(SS	3	.001(+)	
PDT, SS(CTY	4	.001(+)	
PDT)CS, SS	7	.001(+)	
PDT)CS, SS(CTY	14	.001(+)	
PDT)CS, SS(ED	14	.001(+)	
PFS)CS, SS	7	.001(+)	
SDT, CS	2	.01	Non-monotonic
SDT, SS	2	.01(+)	

SDT, CS(CTY	4	.05	Non-monotonic
SDT, CTY(SS	3	.001(+)	
SDT, SS(CTY	4	NS	
SDT)CS, SS	7	.01(+)	
SDT)CS, SS(CTY	14	NS	
SDT)CS, SS(ED	14	NS	
SIT, YT	2	.001(+)	
SIT, CS(SS	10	.10	
SIT, SS(CS	10	.001(+)	
SIT)CS, SS(ED, YT	56	.001(+)	
SIT)CS, SS(YT	28	.001(+)	Within teachers with less than master's degree only.
SIT)CS, SS(YT	28	NS	Within teachers with master's degree or more only.
SIT)CS, SS(YT	28	.01(+)	Within teachers with one or no courses in testing only.
SIT)CS, SS(YT	28	.05(+)	Within teachers with two or more courses in testing only.
TON, SS(CS, NKT	20	NS	
TON)CS, SS(NKT	28	.001(+)	
TRP, SS(CS	10	.001(+)	
TRP)CS, SS	14	.001(+)	
TRP)CS, SS(ED	42	.001(+)	
TRP)CS, SS(ED, YS	56	.001(+)	
TRS, CS	4	.02(+)	
TRS, SS	4	.001(+)	
TRS, CS(SS	10	NS	
TRS, SS(CS	14	.001	Non-monotonic
TRS)CS, SS(ED, YS	56	NS	

APPENDIX XI-B

Opinions on Whether Test Results Should Be Transmitted to Parents

The following tabulations were given by the National Education Association (1962, p. 122). No information is given here about the population or the sampling method because none was given in the Research Bulletin from which these figures are reproduced.

In your opinion, should parents be told their child's IQ score?

	All teachers	Elementary-school teachers	Secondary-school teachers	Men teachers	Women teachers
Yes, I think it should be standard practice	12.7%	9.3%	17.4%	17.1%	10.7%
Yes, in most cases it is all right to tell them	25.6	22.8	29.3	29.1	23.9
No, only in unusual cases should they be told	45.6	49.7	40.1	41.7	47.5
No, it should be standard practice not to tell them	13.5	15.1	11.4	10.1	15.1
Undecided	2.6	3.1	1.8	2.0	2.8

In your opinion, should parents be told their child's achievement test scores in various skill areas?

	All teachers	Elementary-school teachers	Secondary-school teachers	Men teachers	Women teachers
Yes, I think it should be standard practice	40.7%	31.7%	53.0%	49.6%	36.6%
Yes, in most cases it is all right to tell them	39.6	41.7	36.7	36.6	40.9
No, only in unusual cases should they be told	15.5	21.0	8.0	10.8	17.7
No, it should be standard practice not to tell them	3.4	4.6	1.7	2.0	4.0
Undecided	0.8	1.0	0.6	1.0	0.8

National Education Association, Research Division. What do teachers think? NEA Research Bulletin, 1962, 40, 120-125.

APPENDIX XI-C

Percentages of Teachers in Schools of Indicated Counselor-Student Ratios Who Chose Certain Methods of Getting Information as One of the Best Ways to Get Certain Kinds of Information About Students -- Significant ($P < .05$) Relations Only. (Categories of counselor-student ratio labeled in this appendix as high, middle, and low are the same intervals as those used in Chapter XI.)

Table XI-C-1: Percentages of Teachers Choosing "Check School Records: as One of Best Ways to Get Information About Personality and Character.

Couns.-stud. ratio	Percent choosing			
	No	Yes	Total	N
High	73	27	100	552
Middle	68	32	100	625
Low	79	21	100	1297
	75	25	100	2474

Table XI-C-2: Percentages of Teachers Choosing "Observe the Student" as One of Best Ways to Get Information About Fears and Worries.

Couns.-stud. ratio	Percent choosing			
	No	Yes	Total	N
High	34	66	100	552
Middle	41	59	100	625
Low	37	63	100	1297
	37	63	100	2474

Table XI-C-3: Percentages of Teachers Choosing "Check School Records" as One of Best Ways to Get Information About Fears and Worries.

Couns.-stud. ratio	Percent choosing			
	No	Yes	Total	N
High	84	16	100	552
Middle	87	13	100	625
Low	92	8	100	1297
	89	11	100	2474

Table XI-C-4: Percentages of Teachers Choosing "Ask Other Teachers" as One of Best Ways to Get Information About Fears and Worries.

Couns.-stud. ratio	Percent choosing			
	No	Yes	Total	N
High	74	26	100	552
Middle	80	20	100	625
Low	77	23	100	1297
	77	23	100	2474

Table XI-C-5: Percentages of Teachers Choosing "Observe the Student" as One of Best Ways to Get Information About Esthetic and Artistic Abilities.

	Percent choosing			
Couns.-stud. ratio	No	Yes	Total	N
High	41	59	100	552
Middle	46	54	100	625
Low	39	61	100	1297
	41	59	100	2474

Table XI-C-6: Percentages of Teachers Choosing "Check School Records" as One of Best Ways to Get Information About Esthetic and Artistic Abilities.

	Percent choosing			
Couns.-stud. ratio	No	Yes	Total	N
High	79	21	100	552
Middle	78	22	100	625
Low	85	15	100	1297
	82	18	100	2474

Table XI-C-7: Percentages of Teachers Choosing "Ask the Parents" as One of Best Ways to Get Information About Esthetic and Artistic Abilities.

	Percent choosing			
Couns.-stud. ratio	No	Yes	Total	N
High	73	27	100	552
Middle	79	21	100	625
Low	81	19	100	1297
	79	21	100	2474

Table XI-C-8: Percentages of Teachers Choosing "Ask Other Students" as One of Best Ways to Get Information About Esthetic and Artistic Abilities.

	Percent choosing			
Couns.-stud. ratio	No	Yes	Total	N
High	91	9	100	552
Middle	92	8	100	625
Low	88	12	100	1297
	90	10	100	2474

Table XI-C-9: Percentages of Teachers Choosing "Check School Records" as One of Best Ways to Get Information About Intelligence and Academic Aptitude.

	Percent choosing			
Couns.-stud-ratio	No	Yes	Total	N
High	26	74	100	552
Middle	26	74	100	625
Low	31	69	100	1297
	28	72	100	2474

Table XI-C-10: Percentages of Teachers Choosing "Administer a Test" as One of Best Ways to Get Information About Intelligence and Academic Aptitude.

	Percent choosing			
Couns.-stud. ratio	No	Yes	Total	N
High	34	66	100	552
Middle	35	65	100	625
Low	29	71	100	1297
	31	69	100	2474

Table XI-C-11: Percentages of Teachers Choosing "Observe the Student" as One of Best Ways to Get Information About Interests.

Couns.-stud. ratio	Percent choosing		Total	N
	No	Yes		
High	53	47	100	552
Middle	58	42	100	625
Low	39	61	100	1297
	47	53	100	2474

Table XI-C-12: Percentages of Teachers Choosing "Check School Records" as One of Best Ways to Get Information About Interests.

Couns.-stud. ratio	Percent choosing		Total	N
	No	Yes		
High	77	23	100	552
Middle	71	29	100	625
Low	80	20	100	1297
	77	23	100	2474

Table XI-C-13: Percentages of Teachers Choosing "Ask Other Students" as One of Best Ways to Get Information About Interests.

Couns.-stud. ratio	Percent choosing		Total	N
	No	Yes		
High	91	9	100	552
Middle	94	6	100	625
Low	91	9	100	1297
	92	8	100	2474

Table XI-C-14: Percentages of Teachers Choosing "Check School Records" as One of Best Ways to Get Information About Aspirations and Ambitions.

Couns.-stud. ratio	Percent choosing		Total	N
	No	Yes		
High	80	20	100	552
Middle	79	21	100	625
Low	87	13	100	1297
	83	17	100	2474

Table XI-C-15: Percentages of Teachers Choosing "Administer a Test" as One of Best Ways to Get Information About Aspirations and Ambitions.

Couns.-stud. ratio	Percent choosing		Total	N
	No	Yes		
High	82	18	100	552
Middle	88	12	100	625
Low	84	16	100	1297
	85	15	100	2474

Table XI-C-16: Percentages of Teachers Choosing "Observe the Student" as One of Best Ways to Get Information About Non-academic Skills and Abilities.

Couns.-stud. ratio	Percent choosing		Total	N
	No	Yes		
High	55	45	100	552
Middle	59	41	100	625
Low	48	52	100	1297
	52	48	100	2474

Table XI-C-17: Percentages of Teachers Choosing "Check School Records" as One of Best Ways to Get Information About Non-academic Skills and Abilities.

Couns.-stud. ratio	Percent choosing		Total	N
	No	Yes		
High	70	30	100	552
Middle	74	26	100	625
Low	81	19	100	1297
	77	23	100	2474

Table XI-C-18: Percentages of Teachers Choosing "Ask the Student" as One of Best Ways to Get Information About Non-academic Skills and Abilities.

Couns.-stud. ratio	Percent choosing		Total	N
	No	Yes		
High	57	43	100	552
Middle	57	43	100	625
Low	62	38	100	1297
	60	40	100	2474

Table XI-C-19: Percentages of Teachers Choosing "Ask Other Adults" as One of Best Ways to Get Information About Non-academic Skills and Abilities.

Couns.-stud. ratio	Percent choosing		Total	N
	No	Yes		
High	95	5	100	552
Middle	91	9	100	625
Low	93	7	100	1297
	93	7	100	2474

Table XI-C-20: Percentages of Teachers Choosing "Check School Records" as One of Best Ways to Get Information About Family and Home Life.

Couns.-stud. ratio	Percent choosing		Total	N
	No	Yes		
High	66	34	100	552
Middle	71	29	100	625
Low	81	19	100	1297
	75	25	100	2474

Table XI-C-21: Percentages of Teachers Choosing "Ask the Student" as One of Best Ways to Get Information About Family and Home Life.

Couns.-stud. ratio	Percent choosing		Total	N
	No	Yes		
High	58	42	100	552
Middle	51	49	100	625
Low	61	39	100	1297
	58	42	100	2474

Table XI-C-22: Percentages of Teachers Choosing "Ask the Parents" as One of Best Ways to Get Information About Family and Home Life.

Couns.-stud. ratio	Percent choosing		Total	N
	No	Yes		
High	48	52	100	552
Middle	41	59	100	625
Low	51	49	100	1297
	48	52	100	2474

Table XI-C-23: **Percentages of Teachers Choosing "Ask Other Teachers" as One of Best Ways to Get Information About Family and Home Life.**

Couns.-stud-ratio	Percent choosing No	Yes	Total	N
High	77	23	100	552
Middle	82	18	100	625
Low	76	24	100	1297
	78	22	100	2474

Table XI-C-24: **Percentages of Teachers Choosing "Ask Other Adults" as One of Best Ways to Get Information About Family and Home Life.**

Couns.-stud. ratio	Percent choosing No	Yes	Total	N
High	82	18	100	552
Middle	84	16	100	625
Low	79	21	100	1297
	81	19	100	2474

APPENDIX XI-D

Percentages of Teachers in Schools of Indicated Counselor-Student Ratios Who Had Indicated Number of Years' Experience in Teaching.

Counselor-student ratio	Years in teaching				Total	N	Mean years
	1-3	4-9	10-19	20 or more			
.00323 - .05882	31	27	19	23	100	552	11.6
.00168 - .00322	17	22	26	35	100	625	15.6
Zero - .00167	31	28	20	21	100	1297	11.2
	27	26	22	25	100	2474	12.4

6 df, chi-square = 79.11, P < .001

APPENDIX XI-E

Percentages of Teachers with Differing Years' Experience in Teaching Who Chose Certain Methods as Best Ways to Obtain Certain Kinds of Information about Students, Controlled for Counselor-Student Ratio of School: Further Tabulations of Significant Relations

Table XI-E-1. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Observe the Student" as One of the Best Ways to Get Information About Personality and Character, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing		Total	N	Chi-square	
	No	Yes				
	Couns.-stud. ratio .00323 to .05882					
Over 13	21	79	100	177		
4 to 13	13	87	100	204		
1 to 3	13	87	100	171		
	16	84	100	552	5.09	P < .10
	Couns.-stud. ratio .00168 to .00322					
Over 19	20	80	100	215		
7 to 19	18	82	100	236		
1 to 6	14	86	100	174		
	18	82	100	625	3.10	NS
	Couns.-stud. ratio zero to .00167					
Over 13	20	80	100	392		
4 to 13	12	88	100	508		
1 to 3	15	85	100	397		
	15	85	100	1297	9.62	P < .01
	6 df, total chi-square				17.81	P < .01

Table XI-E-2. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Observe the Student" as One of the Best Ways to Get Information about Esthetic and Artistic Abilities, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	 Yes	Total	N	Chi-square	
	Couns.-stud. ratio .00323 to .05882					
Over 13	48	52	100	177		
4 to 13	38	62	100	204		
1 to 3	37	63	100	171		
	41	59	100	552	5.87	P < .06
	Couns.-stud. ratio .00168 to .00322					
Over 19	51	49	100	215		
7 to 19	48	52	100	236		
1 to 6	37	63	100	174		
	46	54	100	625	8.41	P < .02
	Couns.-stud. ratio zero to .00167					
Over 13	44	56	100	392		
4 to 13	38	62	100	508		
1 to 3	35	65	100	397		
	39	61	100	1297	6.65	P < .01
	6 df, total chi-square				20.93	P < .01

Table XI-E-3. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Observe the Student" as One of the Best Ways to Get Information About Performance in School Subjects, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	 Yes	Total	N	Chi-square	
	Couns.-stud. ratio .00323 to .05882					
Over 13	63	37	100	177		
4 to 13	53	47	100	204		
1 to 3	49	51	100	171		
	55	45	100	552	6.40	P < .05
	Couns.-stud. ratio .00168 to .00322					
Over 19	65	35	100	215		
7 to 19	61	39	100	236		
1 to 6	53	47	100	174		
	60	40	100	625	5.47	NS
	Couns.-stud. ratio zero to .00167					
Over 13	57	43	100	392		
4 to 13	57	43	100	508		
1 to 3	53	47	100	397		
	56	44	100	1297	2.13	NS
	6 df, total chi-square				14.00	P < .05

Table XI-E-4. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Observe the Student" as One of the Best Ways to Get Information About Family and Home Life, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing		Total	N	Chi-square	
	No	Yes				
Couns.-stud. ratio .00323 to .05882						
Over 13	70	30	100	177		
4 to 13	59	41	100	204		
1 to 3	58	42	100	171		
	62	38	100	552	7.05	P < .03
Couns.-stud. ratio .00168 to .00322						
Over 19	69	31	100	215		
7 to 19	68	32	100	236		
1 to 6	60	40	100	174		
	66	34	100	625	3.61	NS
Couns.-stud. ratio zero to .00167						
Over 13	69	31	100	392		
4 to 13	60	40	100	508		
1 to 3	59	41	100	397		
	63	37	100	1297	9.83	P < .01
	6 df, total chi-square				20.83	P < .01

Table XI-E-5. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Check School Records" as One of the Best Ways to Get Information About Personality and Character, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	Percent choosing Yes	Total	N	Chi-square	
	Couns.-stud. ratio .00323 to .05882					
Over 13	71	29	100	177		
4 to 13	73	27	100	204		
1 to 3	76	24	100	171		
	73	27	100	552	1.23	NS
	Couns.-stud. ratio .00168 to .00322					
Over 19	62	38	100	215		
7 to 19	66	34	100	236		
1 to 6	79	21	100	174		
	68	32	100	625	13.93	$P < .001$
	Couns.-stud. ratio zero to .00167					
Over 13	77	23	100	392		
4 to 13	78	22	100	508		
1 to 3	83	17	100	397		
	79	21	100	1297	4.96	$P < .10$
	6 df, total chi-square				20.12	$P < .01$

Table XI-E-6. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Check School Records" as One of the Best Ways to Get Information About Health of Students, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	 Yes	Total	N	Chi-square	
	Couns.-stud. ratio .00323 to .05882					
Over 13	28	72	100	177		
4 to 13	21	79	100	204		
1 to 3	30	70	100	171		
	26	74	100	552	*	NS
	Couns.-stud. ratio .00168 to .00322					
Over 13	37	63	100	392		
4 to 13	29	71	100	508		
1 to 3	24	76	100	397		
	30	70	100	1297	2.38	NS
	Couns.-stud. ratio zero to .00167					
Over 13	37	63	100	392		
4 to 13	29	71	100	508		
1 to 3	24	76	100	397		
	30	70	100	1297	15.91	P < .001
	6 df, total chi-square				18.29	P < .01

*Counted as zero because direction is opposite to rest of table.

Table XI-E-7. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Check School Records" as One of the Best Ways to Get Information About Intelligence and Academic Aptitude, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing		Total	N	Chi-square	
	No	Yes				
Couns.-stud. ratio .00323 to .05882						
Over 13	28	72	100	177		
4 to 13	22	78	100	204		
1 to 3	30	70	100	171		
	26	74	100	552	*	NS
Couns.-stud. ratio .00168 to .00322						
Over 19	32	68	100	215		
7 to 19	25	75	100	236		
1 to 6	18	82	100	174		
	26	74	100	625	14.72	$P < .001$
Couns.-stud. ratio zero to .00167						
Over 13	33	67	100	392		
4 to 13	30	70	100	508		
1 to 3	29	71	100	397		
	31	69	100	1297	1.77	NS
6 df, total chi-square					16.49	$P < .02$

*Counted as zero because direction is opposite to rest of table.

Table XI-E-8. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Ask the Student" as One of the Best Ways to Get Information About the Health of Students, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	 Yes	Total	N	Chi-square	
	Couns.-stud. ratio .00323 to .05882					
Over 13	87	13	100	177		
4 to 13	71	29	100	204		
1 to 3	78	22	100	171		
	78	22	100	552	14.06	P < .001
	Couns.-stud. ratio .00168 to .00322					
Over 19	83	17	100	215		
7 to 19	79	21	100	236		
1 to 6	79	21	100	174		
	80	20	100	625	1.13	NS
	Couns.-stud. ratio zero to .00167					
Over 13	81	19	100	392		
4 to 13	80	20	100	508		
1 to 3	83	17	100	397		
	81	19	100	1297	*	NS
	6 df, total chi-square				15.19	P < .02

*Counted as zero because direction is opposite to rest of table.

Table XI-E-9. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Ask the Student" as One of the Best Ways to Get Information About Aspirations and Ambitions, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	 Yes	Total	N	Chi-square	
	Couns.-stud. ratio .00323 to .05882					
Over 13	20	80	100	177		
4 to 13	14	86	100	204		
1 to 3	15	85	100	171		
	16	84	100	552	2.24	NS
	Couns.-stud. ratio .00168 to .00322					
Over 19	20	80	100	215		
7 to 19	12	88	100	236		
1 to 6	10	90	100	174		
	14	86	100	625	8.57	P < .02
	Couns.-stud. ratio zero to .00167					
Over 13	16	84	100	392		
4 to 13	12	88	100	508		
1 to 3	13	87	100	397		
	13	87	100	1297	2.98	NS
	6 df, total chi-square				13.75	P < .05

Table XI-E-10. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Ask Other Teachers" as One of the Best Ways to Get Information About Personality and Character, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	Percent choosing Yes	Total	N	Chi-square	
	Couns.-stud. ratio .00323 to .05882					
Over 13	57	43	100	177		
4 to 13	45	55	100	204		
1 to 3	51	49	100	171		
	50	50	100	552	5.58	P < .07
	Couns.-stud. ratio .00168 to .00322					
Over 19	65	35	100	215		
7 to 19	54	46	100	236		
1 to 6	49	51	100	174		
	56	44	100	625	11.39	P < .01
	Couns.-stud. ratio zero to .00167					
Over 13	58	42	100	392		
4 to 13	54	46	100	508		
1 to 3	51	49	100	397		
	54	46	100	1297	3.73	NS
	6 df, total chi-square				20.70	P < .01

Table XI-E-11. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Ask Other Teachers" as One of the Best Ways to Get Information About Fears and Worries, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	 Yes	Total	N	Chi-square	
	Couns.-stud. ratio .00323 to .05882					
Over 13	81	19	100	177		
4 to 13	69	31	100	204		
1 to 3	72	28	100	171		
	74	26	100	552	7.68	P < .03
	Couns.-stud. ratio .00168 to .00322					
Over 19	86	14	100	215		
7 to 19	78	22	100	236		
1 to 6	77	23	100	174		
	80	20	100	625	5.56	P < .06
	Couns.-stud. ratio zero to .00167					
Over 13	80	20	100	392		
4 to 13	77	23	100	508		
1 to 3	76	24	100	397		
	77	23	100	1297	1.93	NS
	6 df, total chi-square				15.17	P < .02

Table XI-E-12. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Ask Other Teachers" as One of the Best Ways to Get Information About the Health of Students, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	Percent choosing Yes	Total	N	Chi-square	
	Couns.-stud. ratio .00323 to .05882					
Over 13	89	11	100	177		
4 to 13	82	18	100	204		
1 to 3	85	15	100	171		
	85	15	100	552	4.12	NS
	Couns.-stud. ratio .00168 to .00322					
Over 19	89	11	100	215		
7 to 19	89	11	100	236		
1 to 6	87	13	100	174		
	88	12	100	625	0.31	NS
	Couns.-stud. ratio zero to .00167					
Over 13	92	8	100	392		
4 to 13	87	13	100	508		
1 to 3	87	13	100	397		
	89	11	100	1297	8.21	$P < .02$
	6 df, total chi-square				12.64	$P < .05$

Table XI-E-13. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Ask Other Teachers" as One of the Best Ways to Get Information About Intelligence and Academic Aptitude, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	Percent choosing Yes	Total	N	Chi-square	
	Couns.-stud. ratio .00323 to .05882					
Over 13	76	24	100	177		
4 to 13	75	25	100	204		
1 to 3	77	23	100	171		
	76	24	100	552	*	NS
	Couns.-stud. ratio .00168 to .00322					
Over 19	86	14	100	215		
7 to 19	74	26	100	236		
1 to 6	78	22	100	174		
	79	21	100	625	10.81	P < .01
	Couns.-stud. ratio zero to .00167					
Over 13	83	17	100	392		
4 to 13	78	22	100	508		
1 to 3	77	23	100	397		
	79	21	100	1297	5.08	P < .10
	6 df, total chi-square				15.89	P < .02

*Counted as zero because direction is opposite to rest of table.

Table XI-E-14. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Ask Other Teachers" as One of the Best Ways to Get Information About Non-academic Skills and Abilities, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	Percent choosing Yes	Total	N	Chi-square	
Couns.-stud. ratio .00323 to .05882						
Over 13	77	23	100	177		
4 to 13	67	33	100	204		
1 to 3	73	27	100	171		
	72	28	100	552	5.32	P < .10
Couns.-stud. ratio .00168 to .00322						
Over 19	79	21	100	215		
7 to 19	73	27	100	236		
1 to 6	71	29	100	174		
	74	26	100	625	3.88	NS
Couns.-stud. ratio zero to .00167						
Over 13	76	24	100	392		
4 to 13	69	31	100	508		
1 to 3	69	31	100	397		
	71	29	100	1297	7.24	P < .03
	6 df, total chi-square				16.44	P < .02

Table XI-E-15. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Administer a Test" as One of the Best Ways to Get Information About Fears and Worries, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	 Yes	Total	N	Chi-square	
	Couns.-stud. ratio .00323 to .05882					
Over 13	92	8	100	177		
4 to 13	88	12	100	204		
1 to 3	88	12	100	171		
	89	11	100	552	2.20	NS
	Couns.-stud. ratio .00168 to .00322					
Over 19	86	14	100	215		
7 to 19	86	14	100	236		
1 to 6	91	9	100	174		
	87	13	100	625	*	NS
	Couns.-stud. ratio zero to .00167					
Over 13	91	9	100	392		
4 to 13	86	14	100	508		
1 to 3	83	17	100	397		
	87	13	100	1297	10.90	P < .01
	6 df, total chi-square				13.10	P < .05

*Counted as zero because direction is opposite to rest of table.

Table XI-E-16. Percentages of Teachers with Indicated Years' Experience in Teaching Who Chose "Administer a Test" as One of the Best Ways to Get Information About the Health of Students, Shown Separately by Counselor-Student Ratio of School.

Years in teaching	Percent choosing No	 Yes	Total	N	Chi-square	
Couns.-stud. ratio .00323 to .05882						
Over 13	90	10	100	177		
4 to 13	87	13	100	204		
1 to 3	88	12	100	171		
	88	12	100	552	1.34	NS
Couns.-stud. ratio .00168 to .00322						
Over 19	93	7	100	215		
7 to 19	83	17	100	236		
1 to 6	86	14	100	174		
	87	13	100	625	8.42	P < .02
Couns.-stud. ratio zero to .00167						
Over 13	90	10	100	392		
4 to 13	83	17	100	508		
1 to 3	87	13	100	397		
	87	13	100	1297	7.98*	P < .02
	6 df, total chi-square				17.74	P < .01

*Because the disproportionalities in the bottom two cells of this sub-table were contrary (though weakly) to the direction in the rest of the table, their chi-square values were not included in the total for the sub-table.

APPENDIX XI-F. Significance of Relations Between Teachers' Years in Teaching and Frequency of Choosing Indicated Method as One of Best Ways to Obtain Indicated Kind of Information About Students, Shown Separately for Indicated Ranges of Counselor-Student Ratio. (Categories of counselor-student ratio labeled high, middle and low are the same intervals as those used in Chapter XI. Decimal figures show level of significance of the relation if the level was .10 or less. NS means level of significance was greater than .10. NT means too few teachers chose the method for the relation to be testable. "Total" means the level of significance with counselor-student ratio controlled. Except in the one case noted, all significant relations were in the direction of teachers with more years of service less frequently choosing the particular method of obtaining information as being one of the best ways to get the particular kind of information.)

Kind of information	Counselor-student ratio	Observe the student	Check school records	Ask the student	Ask the parents	Ask other teachers	Administer a test	Ask other students	Ask other adults
Personality and character	High	.10	NS*	NS	NS	.07	NS	.01	NS
	Middle	NS	.001*	NS	NS	.01	NS	.01	NS
	Low	.01	.10*	NS	NS	NS	NS	.02	NS
	Total	.01	.01*	NS	NS	.01	NS	.001	NS
Fears and worries	High	.02	NS	NS	NS	.03	NS	NS	NS
	Middle	.01	NS	NS	NS	.06	NS	NS	NS
	Low	.01	NS	NS	NS	NS	.01	NS	NS
	Total	.001	NS	NS	NS	.02	.05	NS	NS
Esthetic and artistic abilities	High	.06	NS	NS	NS	NS	NS	NS	NS
	Middle	.02	NS	NS	NS	NS	NS	NS	NS
	Low	.05	NS	NS	NS	NS	NS	NS	NS
	Total	.01	NS	NS	NS	NS	NS	NS	NS
Performance in school subjects	High	.05	NS	NS	NS	NS	NS	NS	NS
	Middle	NS	NS	NS	NS	.001	NS	NS	NS
	Low	NS	NS	NS	NS	.001	.05	NS	NS
	Total	.05	NS	NS	NS	.001	NS	NS	NS

(continued)

APPENDIX XI-F (continued).

Kind of information	Counselor-student ratio	Observe the student	Check school records	Ask the student	Ask the parents	Ask other teachers	Administer a test	Ask other students	Ask other adults
Health	High	NS	NS	.001	NS	NS	NS	NT	NS
	Middle	NS	NS	NS	NS	NS	.02	NT	NS
	Low	NS	.001	NS	NS	.02	.02	NT	NS
	Total	NS	.01	.02	NS	.05	.01	NT	NS
Intelligence and academic aptitude	High	NS	NS	NT	NT	NS	NS	NT	NT
	Middle	NS	.001	NT	NT	.01	NS	NT	NT
	Low	NS	NS	NT	NT	.10	.001	NT	NT
	Total	NS	.02	NT	NT	.02	.01	NT	NT
Interests	High	NS	NS	.01	NS	NS	NS	NS	NS
	Middle	NS	NS	.10	NS	NS	NS	NS	NS
	Low	NS	NS	.05	NS	.05	NS	NS	NS
	Total	NS	NS	.001	NS	NS	NS	NS	NS
Aspirations and ambitions	High	NS	NS	NS	NS	NS	NS	NS	NS
	Middle	NS	NS	.02	NS	NS	NS	NS	NS
	Low	NS	NS	NS	NS	.01	.001	NS	NS
	Total	NS	NS	.05	NS	NS	.001	NS	NS
Non-academic skills and abilities	High	.01	NS	NS	NS	.10	NS	.01	NS
	Middle	.001	NS	NS	NS	NS	NS	NS	NS
	Low	.01	NS	NS	NS	.03	NS	.01	NS
	Total	.001	NS	NS	NS	.02	NS	.001	NS
Family and home life	High	.03	NS	NS	NS	.01	NS	NS	NS
	Middle	NS	NS	NS	NS	.07	NS	NS	NS
	Low	.01	NS	NS	NS	.001	NS	NS	NS
	Total	.01	NS	NS	NS	.001	NS	NS	NS

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* Opposite in direction to other relations in table; teachers with more years of service more often chose checking school records as one of the best ways to get information about personality and character.

APPENDIX XI-G. Percentages of Teachers in Schools of Indicated Enrollments Who Named Indicated Number of Kinds of Information as Desirable byt Not Available in School Files, Shown separately by Number of Kinds Teacher Said Was Available in School Files.

Part 1: Schools with counselor-student ratio of .00323 to .05882

	Number of kinds of information desirable but not in files						
Enrollment	3 or 4	1 or 2	None	Total	N	Chi-square	
Teachers reporting 6 to 10 kinds of information in files:							
600 - 5499	14	33	53	100	114		
17 - 599	39	39	22	100	67		
	23	35	42	100	181	22.44	P < .001
	4 to 6	2 or 3	0 or 1				
Teachers reporting 4 or 5 kinds in files:							
600 - 5499	41	47	12	100	64		
200 - 599	50	40	10	100	48		
17 - 199	61	29	10	100	48		
	50	39	11	100	160	5.31	NS
	5 to 9	3 or 4	0 to 2				
Teachers reporting 1 to 3 kinds in files:							
600 - 5499	42	31	27	100	26		
200 - 599	38	40	22	100	40		
17 - 199	58	30	12	100	67		
	49	33	18	100	133	6.88	NS
10 df, total chi-square for high-ratio schools						34.63	P < .001

APPENDIX XI-G (continued). Part 2: Schools with counselor-student ratio of .00168 to .00322.

	Enrollment	Number of kinds of information desirable but not in files			Total	N	Chi-square	
		3 or 4	1 or 2	None				
Teachers reporting 6 to 10 kinds of information in files:								
	600 - 5499	20	30	50	100	137		
	200 - 599	29	39	32	100	66		
		23	33	44	100	203	5.92	P < .053
		4 to 6	2 or 3	0 or 1				
Teachers reporting 4 or 5 kinds in files:								
	600 - 5499	40	47	13	100	129		
	200 - 599	72	23	5	100	60		
		50	39	11	100	189	16.54	P < .001
		5 to 9	3 or 4	0 to 2				
Teachers reporting 1 to 3 kinds in files:								
	600 - 5499	44	33	23	100	82		
	200 - 599	36	48	16	100	56		
		41	39	20	100	138	2.52*	NS
	6 df, total chi-square for middle-ratio schools						24.98	P < .001

APPENDIX XI-G (continued). Part 3: Schools with counselor-student ratio of zero to .00167.

	Enrollment	Number of kinds of information desirable but not in files			Total	N	Chi-square	
		3 or 4	1 or 2	None				
Teachers reporting 6 to 10 kinds of information in files:								
	600 - 5499	26	26	48	100	80		
	17 - 599	41	36	23	100	136		
		36	32	32	100	216	14.38	P < .001
		4 to 6	2 or 3	0 or 1				
Teachers reporting 4 or 5 kinds in files:								
	600 - 5499	42	44	14	100	85		
	200 - 599	53	41	6	100	135		
	17 - 199	56	40	4	100	199		
		53	41	6	100	419	15.27	P < .01
		5 to 9	3 or 4	0 to 2				
Teachers reporting 1 to 3 kinds in files:								
	600 - 5499	56	32	12	100	90		
	200 - 599	49	41	10	100	169		
	17 - 199	48	33	19	100	268		
		49	36	15	100	527	**.	NS
	10 df, total chi-square for low-ratio schools						29.65	P < .001
	26 df, total chi-square						89.26	P < .001

* Chi-square counted only from cells consistent in direction with rest of table.
** Counted as zero because direction is generally not consistent with rest of table.

APPENDIX XI-H. **Percentages of Teachers in Schools of Indicated Counselor-Student Ratios Who Named Indicated Number of Kinds of Tests which Were Not Being Administered in the School but Ought to Have Been, Shown Separately by Number of Kinds Teacher Said Were Being Administered.**

Part 1: Schools of 600 to 5499 enrollment

Counselor-student ratio	Kinds not admin. but ought to be: 1 or 2	None	Total	N	Chi-square	
Teachers reporting 4 to 6 kinds of tests administered:						
.00323 - .05882	57	43	100	172		
.00168 - .00322	58	42	100	243		
Zero - .00167	68	32	100	150		
	61	39	100	565	4.68	NS
	3 to 5	0 to 2				
Teachers reporting none to 3 kinds administered:						
.00323 - .05882	50	50	100	26		
.00168 - .00322	51	49	100	106		
Zero - .00167	55	45	100	112		
	53	47	100	244	0.63	NS
4 df, total chi-square for high enrollment schools					5.31	NS

APPENDIX XI-H (continued). Part 2: Schools of 200 to 599 enrollment

	Counselor-student ratio	Kinds not admin. but ought to be: 1 or 2	Kinds not admin. but ought to be: None	Total	N	Chi-square	
Teachers reporting 4 to 6 kinds of tests administered:							
	.00323 - .05882	67	33	100	73		
	.00168 - .00322	63	37	100	128		
	Zero - .00167	78	22	100	161		
		71	29	100	362	7.96	P < .02
		3 to 5	0 to 2				
Teachers reporting none to 3 kinds administered:							
	.00323 - .05882	49	51	100	55		
	.00168 - .00322	59	41	100	54		
	Zero - .00167	65	35	100	202		
		61	39	100	311	5.18	P < .10
4 df, total chi-square for middle enrollment schools						13.14	P < .02

APPENDIX XI-H (continued). Part 3: Schools of 17 to 199 enrollment

Counselor-student ratio	Kinds not admin. but ought to be: 1 or 2	None	Total	N	Chi-square	
Teachers reporting 4 to 6 kinds of tests administered:						
.00323 - .05882	68	32	100	77		
Zero - .00167	74	26	100	231		
	72	28	100	308	0.77	NS
	3 to 5	0 to 2				
Teachers reporting none to 3 kinds administered:						
.00323 - .05882	57	43	100	75		
Zero - .00167	65	35	100	301		
	64	36	100	376	1.80	NS
2 df, total chi-square for low enrollment schools					2.57	NS
10 df, total chi-square					21.02	P <.022